

3.3.1 - Startup Initiatives



ALAGAPPA UNIVERSITY

(A State University Established in 1985)

KARAIKUDI – 630003, TAMIL NADU



ALAGAPPA UNIVERSITY INNOVATION & START-UP POLICY (AISP)



Version 1.0

Start-Up Cell



ALAGAPPA UNIVERSITY

(Accredited with A+ Grade by NAAC (CGPA: 3.64) in the Third Cycle & Graded as Category – I University by MHRD-UGC)

KARAIKUDI - 630003, TAMIL NADU



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University 'School' Level Executive Council of Startup Cell (2018-'19)

Name of the School	SCHOOL OF BIOLOGICAL SCIENCES			
Name & Address of the Chairperson (President)	Dr. J. Jeyakanthan Professor and Head, Department of Bioinformatics			
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	Mobile	+91-9789809245		
Name & Address of the Coordinator (SPOC)	Dr. A. Veera Ravi Professor, Department of Biotechnology			
	E-mail	aveeraravi@rediffmail.com		
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Name & Address of Secretary (Research Scholar / Student)	Name	Mr. L. Lakshmanan Research Scholar, Department of Bioinformatics		
	Course	Ph.D - Bioinformatics		
	Reg. No. (if any)	1076		
	E-mail	lavalaksh16@gmail.com		
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Bioinformatics	Dr. M. Karthikeyan	+91-9486981874	Ms. M. Arthy	+91-9940386593
Biomedical Sciences	Dr. P. Rameshthangam	+91-9444834424	Ms. A. Deenshanooof	+91-8098810238
Biotechnology	Prof. A. Veera Ravi	+91-9487149249	Ms. R. Durgadevi	+91-7845351061
Botany	Dr. N. Anusuya	+91-9942384941	Mr. PR. Kaleeswarran	+91-9940852527
Microbiology	Dr. T. Sathiamoorthi	+91-9790031626	Mr. Prasannaraj. T	+91-9843052458

Date: 16-08-2018

16/08/2018

Prof. J. Jeyakanthan
Chairperson, School of Biological Sciences

**MINUTES OF THE MEETING OF THE EXECUTIVE COUNCIL OF
STARTUP CELL (2018-19) OF SCHOOL OF BIOLOGICAL SCIENCE
HELD ON 10th DECEMBER 2018 AT 03.30 PM AT THE CONFERENCE
HALL, DEPARTMENT BIOINFORMATICS, SCIENCE CAMPUS,
ALAGAPPA UNIVERSITY, KARAIKUDI 630 003**

The following Faculty members were present:

S. No	Name and Address	Affiliation in the IAEC, Alagappa University
1.	Dr. J. Jeyakanthan, Professor and Head, Department of Bioinformatics,	Chairperson
2.	Dr. A. Veera Ravi, Professor, Department of Biotechnology,	Coordinator & Faculty in Charge
3.	Dr. M. Biruntha, Assistant Professor, Department of Animal Health & Management,	Faculty in Charge
4.	Dr. M. Karthikeyan, Assistant Professor, Department of Bioinformatics,	Faculty in Charge
5.	Dr. P. Rameshthangam, Assistant Professor, Department of Biomedical Sciences,	Faculty in Charge
6.	Dr. T. Sathiamoorthi, Assistant Professor, Department of Microbiology,	Faculty in Charge

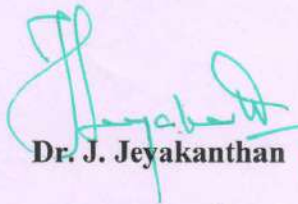
The following student members were present:

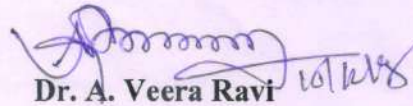
S. No	Name and Address	Affiliation in the IAEC, Alagappa University
1.	Mr. L. Lakshmanan, Research Scholar, Department of Bioinformatics,	Member Secretary (research scholar/student)
2.	Ms. R. Durgadevi, Research Scholar, Department of Biotechnology,	Student member
3.	Ms. M. Aarthy, Research Scholar, Department of Bioinformatics,	Student member
4.	Ms. Vinitha Manimaran, Research Scholar, Department of Animal Health & Management,	Student member
5.	Mr. T. Prasannaraj, Research Scholar, Department of Microbiology,	Student member
6.	Ms. A. Deenshanoof, Research Scholar, Department of Biomedical Sciences,	Student member

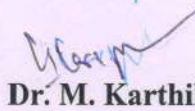
At the outset, **Prof. J. Jeyakanthan**, Chairperson of Executive Council of Startup Cell (2018-19) of School of Biological Science of Alagappa University welcomed the entire Members of Startup cell for the meeting. The Chairperson briefed about the core objectives and the proposed activities of the Startup cell to the Members. He also briefed about the budgetary requirement for the successful functioning of the cell. In continuation of the detail discussion among cell members the following recommendation were made:

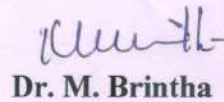
1. It is decided to organize at least one motivation talk every month with a successful entrepreneur in the field of dissemination of ideas of entrepreneur skill development, sources of financial assistance available, product development, technical assistance, marketing etc., to the students of Biological Sciences.
2. The following tentative list of entrepreneurs (Annexure.I) will be invited to deliver motivation talk in the proposed schedule.
3. In order to meet out the expenses related to TA/DA, Memento to speakers and the refreshment to the participants a sum of rupees 25,000/- (Twenty five thousands only) for every meeting is requested from the University.

The meeting ended with a vote of thanks by the Chairperson.

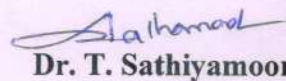

Dr. J. Jeyakanthan 10/12/18

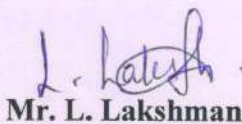

Dr. A. Veera Ravi


Dr. M. Karthikeyan



Dr. M. Brintha

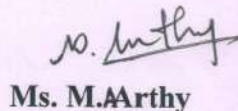

Dr. P. Rameshthangam

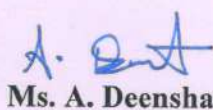

Dr. T. Sathiyamoorthi

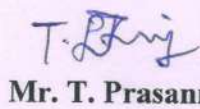

Mr. L. Lakshmanan


Ms. R. Durgadevi


Ms. Vinitha manimaran


Ms. M.Arthy


Ms. A. Deenshanoo


Mr. T. Prasannaraj

Annexure I

List of entrepreneurs to be invited to deliver motivation lecture

Sl. No	Name of the entrepreneur	Organization	Month of Meeting
1	Ragul T	Social Entrepreneur, Jawadhu Hills, Tiruvannamalai (DT), Tamil Nadu – 635703 Mobile: +91 88707 58707 Email: tragul@gmail.com Mobile: +91 88707 58707	January
2	Dr. P.E. Cheran Founder, Consultant	Super Shrimps Consultants, 103, Shree apartments, 6 th Cross, 2 nd Main road, Dakshnamurthy nagar, Kadirkamam, Pondicherry- 605 009. Email: pecheran28@gmail.com Mobile: +91 94902 46716	February
3	Dr. N.S. Allada Head- Technical	Synergy Biotechnologies, #2-1-123, Plot No. 86 & 87, Rampally, Hyderabad – 501 301. Email: nsallada@gmail.com Phone: 040- 2980 2372 Mobil: 0 94406 20030	March
4	Dr. Mugasimangalam C Raja President, Founder and CEO	Genotypic Technology Pvt Ltd, Ashwath Nagar, Devasandra Layout, Bengaluru, Karnataka. Email: genomicsatgenotypic.co.in	April
5	R. Ragu Vice President	Schrodinger LLC, Bengaluru, Karnataka. Email: raghu.rangaswamy@schrodinger.com	May
6	Dr. D. Bharanidharan Scientist	Department of Bioinformatics, Aravind Eye Care System, Madurai. Email: bharani@aravind.org	June
7	Jeyalakshmi Technical Scientist	Wipro GE Healthcare Pvt. Ltd., Guindy, Chennai. Email: jeya.lakshmi@ge.com Phone: +91 44 49681491	July
8	Dr. Parag S. Saudagar, Director	S K Biobiz Pvt Ltd Hall I-2, Sancheti Ware housing complex 10th Mile,	August

		Mumbai Agra Road, Jaulke, Taluka. Dindori Nashik-422206 Email: drparag@skbiobiz.com Mobile: +91 9987398544	
9	Dr. N.K. Udaya Prakash Director	Marina LABS, 14, Kavya Gardens, N.T.Patel Road, Nerkundram, Ch-107Chennai Email: nkudayaprakash@gmail.com Mobile: +91 9444896061	September
10	Dr. V. Sivasubramanian Director	Phycospectrum Environmental Research Centre, Phycospectrum Consultants Pvt. Ltd., 132, AK Block, 7 th Main road, Anna Nagar, Chennai- 600 040. Email: vsivasubramanian@gmail.com Mobile: +91 96771 44453 Phone: 044 42122699	October
11	Dr. A. Arunkumar Director of Marketing and Business Development	Marutham Bio Ages Innovations Pvt. Ltd., No.1, Palani illam, 1 st Floor, 2 nd Street, Sivanandha Colony, Coimbatore- 614 012. Email: arunkumar@bioages.co	November
12	Mr. A.G. Seenivasan	2M BIOTECH 89, Vandikara street, Ramanathapuram – 623 501. Email: agseenivasan@gmail.com	December

Alagappa University – Innovation and Startup Policy (AISP)

Abstract

*The **Alagappa University – Innovation and Startup Policy (AISP)** is a comprehensive framework to enable all the stakeholders including the Students, Scholars, Faculty members, Staff, Alumni and Public to actively engage in innovation and startup related activities. This framework will also facilitate to bring uniformity across the units and stakeholders of the University in terms of Intellectual Property ownership management, technology licensing and institutional Startup policy, thus enabling creation of a robust Innovation and Startup ecosystem across the Alagappa University.*

*This Alagappa University – Innovation and Startup Policy (AISP) is framed in accordance with the '**National Startup and Innovation Policy (NISIP) for Students and Faculty: A Guideline for Higher Education Institutions (2019)**' by the Ministry of Education, Govt. of India and the '**Tamil Nadu Startup & Innovation Policy (2018-2023)**' by Micro, Small and Medium Enterprises Department, Govt. of Tamil Nadu.*

Version: 1.0, 2021

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Alagappa University – Innovation and Startup Policy (AISP)

I. About the University

Alagappa University is a state University, located at Karaikudi in Tamil Nadu. The University was brought into existence by an Act of the Tamil Nadu State Legislative Assembly in **May 1985** with the objective of fostering research, development and dissemination of knowledge in various branches of learning. The University has 44 Departments, 9 Centres and 2 Constituent Colleges on its campus. Forty six Affiliated Colleges located in the districts of Sivaganga and Ramanathapuram are part of the University.

Alagappa University has achieved many milestones. A few of them are as under;

- Obtained **A+ Grade** with CGPA of 3.64 grading by the National Assessment and Accreditation Council (NAAC). Alagappa University is the first State University in Tamil Nadu to obtain the A+ grade.
- Obtained **Category-I status** by the UGC and occupies 2nd place out of 12 State Universities with Category-I Status in the Country. It is the only State University in Tamil Nadu to obtain the Category-I Status.
- Obtained Autonomy status (one among 60 Institutions in the country announced by MHRD (MoE)).
- Secured **33rd** position among Universities in National Institutional Ranking Framework (**NIRF**) **2021** ranking.
- Placed within **501-600** ranking category (bandwidth) in **THE World University Ranking 2022**.
- Secured **24th** position in **QS India Ranking** in 2021.

- It is the only University in Tamil Nadu which has been sanctioned with Rs.100 crores under MHRD - RUSA 2.0 Scheme in 2018.

1. Preamble:

- Since its inception, the Alagappa University has been striving for excellence in higher education, socially relevant research and fruitful extension services for the Country by upholding the vision of the Founder, a great philanthropist, Padma Bhushan Vallal Dr. R.M. Alagappa Chettiar.
- The academic credentials, research outcomes, inclusive rural education are the evidences of the continuing efforts and contributions of Alagappa University for the Higher Education of the State and the Country. Towards bringing all the efforts of the University in the areas related to Innovation and Startups into a single roof, this **Alagappa University – Innovation and Startup Policy (AISP)** is formulated.
- The **Alagappa University – Innovation and Startup Policy (AISP)** intends to guide the units of Alagappa University to promote student driven innovations & start-ups and to engage the students and faculty in innovation and start up activities in campus.
- The entrepreneurial ecosystem in Alagappa University will play key role in identifying, mentoring, nurturing innovative and entrepreneurial potential of students, faculty and staff and transforming them into start-up entrepreneurs by providing guidance for funding, investment opportunities and networking support to make the innovation ventures successful.

2. Policy Objectives:

- The policy (AISP) aims at enabling the stakeholders viz. Students (UG, PG), Ph.D. Scholars, PDF, Faculty members, other Staff (including project staff), Alumni and Public (potential outsiders) to build, streamline and strengthen the innovation and entrepreneurial ecosystem in Alagappa University.
- The policy (AISP) shall be instrumental in leveraging the potential of science, student's creative problem solving and entrepreneurial mind-set, and promoting a strong intra and inter-institutional partnerships with ecosystem enablers and different stakeholders at regional, national and international level.

- The ultimate aim of this policy (AISP) is to provide an enabling and innovative ecosystem in the University in order to emerge as the ‘Knowledge Capital’ and ‘Innovation Hub’ of the State.

3. Vision:

- To serve as an ideal destination for Innovation and Startups by creating a conducive ecosystem in the University campus.

4. Mission:

- To create, support and nurture a vibrant Innovation and Startup ecosystem in Alagappa University resulting in innovation driven startups and entrepreneurial avenues in the University.
- To maximize industry engagement and collaborations with Research Parks of HEIs to promote innovation and entrepreneurship culture among the stakeholders of Alagappa University.
- To strengthen the existing Innovation and Incubation related Centres and Units of Alagappa University.
- To partner with investors and availing support from possible funding agencies in order to enable the Students / Scholars / Faculty Members / Other Staff / Alumni / Public to convert their innovative ideas into Startup ventures.

5. Action Plan:

The following Action plans are framed to evolve processes and mechanisms for easy creation and nurturing of Startups/enterprises by Students / Scholars / Faculty Members / Other Staff / Alumni of Alagappa University and by the Public:

- Creating conducive ecosystem for encouraging Innovations and Entrepreneurship.
- Ensuring adequate resources channeled to the Innovation and Startup ecosystem.
- Strengthening skill development activities towards Innovations and Startups.
- Extending support to social entrepreneurship for a positive social impact and inclusion.

- Ensuring accessibility, connections and partnerships.
- Innovation / Entrepreneurial Impact Assessment

5.1 Creating conducive ecosystem for encouraging Innovations and Entrepreneurship:

5.1.1 Creating facilities in Alagappa University for supporting pre-incubation

a) Alagappa University is already having the following vibrant units for promoting innovation and entrepreneurship ecosystem:

- Institution's Innovation Council-Alagappa University (IIC-ALU)
- Entrepreneurship, Innovation and Career Hub (funded under RUSA 2.0)
- University Science Instrumentation Centre (USIC)
- Industry & Consultancy Cell
- Incubation and Technology Transfer Centre (ITTC)
- Higher Education Innovation Cell
- IPR Cell
- Entrepreneurship Development Centre
- University Business Collaboration Centre (UBCC)
- Small Industries Services Unit (SISU)
- Centre for International Relations
- Start-of-the-art Laboratories in all the Science Departments
- Entrepreneurship support practices by all the Management Departments

b) The '**Alagappa University Innovation and Incubation Centre (AUIIC)**' is being established in the University to coordinate all the activities of the University related to Innovation and Start-ups in association with the aforesaid units.

5.1.2 The newly established 'AUIIC' will serve as a Nodal Centre of the University related to Innovation and Start-ups. The following structural and functional characteristics are envisioned for AUIIC:

a) This 'AUIIC' shall be headed by a full-time Faculty member in the rank of Senior Professor / Professor as an 'Executive Director'. This 'Executive Director' may continue his / her Research and other academic services and may be exempted from taking classes so as to dedicate himself / herself in administering AUIIC

b) The 'AUIIC' shall be provided with administrative and financial autonomy. An

exclusive Annual budget needs to be prepared for the AUIC towards executing activities related to promotion of Innovation and Start-up culture in the Alagappa University.

- c) The 'AUIC' shall serve as Pre-Incubation/Incubation facility to all the Students / Scholars / Faculty Members / Other Staff of all disciplines and departments of the Alagappa University and also to the Alumni / Public.
- d) The 'AUIC' shall facilitate 'Technology Transfer and Commercialization' services to all the stakeholders of the University. The 'Technology Transfer and Commercialization' services of the AUIC shall function with the following modalities:
 - i. A committee comprising of Executive Director of AUIC as Chairman and members including Inventor (in case of Student inventors, the mentor of the student shall also be included), Head of the Department of the Inventor, two members nominated by the University (one from the University and other from outside institution / industry) shall evaluate and recommend the viable technologies to be transferred for commercialization.
 - ii. This committee shall be empowered to negotiate with the Companies / Industries to transfer the technology including financial implications such as one-time grant and the percentage of royalty based on the annual turnover of the sales that shall be shared by the Inventor and University in 60%:40% ratio.
- e) The AUIC shall be preferably registered under Section-8 of Company Act 2013 or 'Society' registered under Society Registration Act with independent governance structure.
- f) Single Point of Contact (SPOC) mechanism shall be created in the AUIC for all the stakeholders to ensure access to information / resources.

5.1.3 The 'AUIC' shall offer mentoring and other relevant services through Pre-

incubation/Incubation units in-return for fees, equity sharing and (or) zero payment basis. The modalities regarding EquitySharing in Start-ups supported through these units shall depend upon the nature of services offered.

- 5.1.4 A centralised ICT based Knowledge management tool shall be developed by the 'AUIIC' for the creation of innovation knowledge platform by utilizing the services of MIS, Alagappa University. This shall also serve as a Registry-cum-Repository on innovators, entrepreneurs, venture firms, incubators, intellectual property support centres, mentors and database of different talents for Start-ups.
- 5.1.5 A Policy research group (Think tank) shall be set up in the 'AUIIC' to carry out research on innovation and start-up ecosystem.
- 5.1.6 The University shall establish an exclusive funding scheme by utilizing / getting financial support from agencies such as DST, DBT, MHRD, AICTE, TDB, TIFAC, DSIR, CSIR, BIRAC, NSTEDB, NRDC, Start-up India, Invest India, MeitY, MSDE, MSME, non-govt. and private sources under CSR for promoting innovation and start-up initiatives.
- 5.1.7 Decentralizing innovation by establishing Fablabs/ Tinkering labs/ Maker-spaces, etc., that may serve as a bridge between innovators and Incubators.
- 5.1.8 The Students, PhD / PDF scholars and Project Fellows shall be encouraged and proper guidance shall be provided to earn at least one appropriate IPR (Patent / Design / Copyright) for their research / innovative ideas. This support shall be in line with the IPR policy of the University.

5.2 Ensuring adequate resources channeled to the Innovation and Startup ecosystem:

- 5.2.1 The Pre-Incubation/Incubation facility established in the 'AUIIC' shall be made accessible 24x7 to Students / Scholars / Faculty Members / Other Staff of all disciplines and departments of the Alagappa University.
- 5.2.2 The Pre-Incubation/Incubation facility shall also be leveraged to Alumni / Public for promoting innovation and start-up ecosystem in the Society.
- 5.2.3 Appropriate fee waiving schemes shall be framed and implemented for availing mentoring and other relevant consultancy services according to the stakeholders.
- 5.2.4 The 'AUIIC' shall host an exclusive online portal to apply for and avail support for Innovation and Start-ups. This also shall serve as a 'Help Centre' to address queries of all the stakeholders related to Innovation, Start-ups and IPR.
- 5.2.5 Alagappa University shall consider providing seed money support to the innovative start-up ideas of the Students / Scholars / Faculty Members / Other Staff / Alumni of the University after the scrutiny and approval of duly constituted committee by the 'AUIIC' with the approval of the University. This Seed money of Rs.10,000/- or more per proposal by individual or a team to cover up the cost for prototype development, field visits, minor tools or raw materials, MSME registration / Licenses, Patent and other related expenses.
- 5.2.6 The consultancy services related to marketing and R&D activities to the Start-ups for solving their problems with respect to finance, marketing, etc. shall be facilitated through the Faculty of Management by establishing '**Finance and Marketing Task Group**' under 'AUIIC'. This group shall be headed by the Dean, Faculty of Management.
- 5.2.7 Appropriate supports for start-ups in content development, proposal writing, advertising, applying for copyrights / trademarks etc., shall be provided through the Faculty of Arts and Faculty of Education by establishing '**Media Task Group**' under 'AUIIC'. This group shall be headed by the Dean, Faculty of Arts and Dean, Faculty of Education.

- 5.2.8 Students entrepreneurs (only who have established their entrepreneurial ventures within / outside the campus; but with the support of the University) may be allowed for the examination, even condonation of shortage of attendance with due recommendation from the 'AUIIC'. Appropriate recommendations be suggested by the 'AUIIC' for making amendments in the examination norms by the University.
- 5.2.9 A special incentive scheme shall be instituted for the successful IPR outcomes. An appreciation certificate along with a cash prize of Rs. 10,000 / Rs. 5,000 / Rs. 2,000 for each published Patent / Design / Copyright respectively shall be provided to the Students / Scholars / Faculty members / Other Staff of the University that are duly approved and recommended by the IPR Cell of the University.
- 5.2.10 Students / Scholars / Faculty members / Other Staff of the University shall be encouraged to transform their research projects / innovative ideas developed at University Departments / Colleges to become start-ups and also to hold equity in such start-ups.

The Institute incubator (AUIIC) may provide space, partial infrastructure, mentorship support, seed funds, support for accounts, legal, IPR services, etc. for the start-up company owned / co-owned by the stakeholders of the University. In return for the services, the University (AUIIC) may hold up to 9% equity / stake in the Start-up company.

The following guidelines are evolved for Faculty / Student Start-ups running with the support of 'AUIIC':

Faculty Startups:

- a. Faculty start-up may be owned by a faculty member alone or with students / scholars or with faculty member of other institution or alumni or with other entrepreneurs.
- b. Interested Faculty / Student / Scholar has to submit an application to the AUIIC for support and assistance. In case of the collaboration with outsiders must be justified

suitably by attaching a signed indemnity bond along with the application for scrutiny / approval.

- c. A faculty may be an owner or co-owner of such start-ups or may play an operational role viz. Technical Advisor / CEO / Manager, etc. with the due permission of the University with the conditions as detailed below:
 - i. Faculty member shall clearly distinguish on-going research work at the University from the work at the startup. Faculty member shall not involve research staff or other staff in the activities of the start-up and vice versa.
 - ii. Faculty member shall not accept honorarium / salary or gifts from the startup.
 - iii. No restrictions on the shares that faculty can hold as long as they do not spend more than 20% of office time on the start-up company in the role and do not compromise in the academic and administrative work / responsibilities.
- d. In case the faculty holds the executive or managerial role for more than six months in a start-up, he/she shall be on sabbatical / leave without pay / or utilize existing leave as per the norms of the University. Such leave shall be considered as an eligible service for all service benefits including seniority, annual increments, promotion and pension.
- e. A faculty member can offer consultancy services to the start-ups or avail consultancy / characterisation / testing services from the competent unit of the University. The utilization of the consultancy / characterisation / testing services for the products developed by the start-up shall be as per the norms of the USIC of the University.
- f. The IP Rights for the technology developed by the start-up and faculty shall be held jointly by the start-up and the University as per the IP Policy of IPR Cell, Alagappa University. However, the University shall own the Intellectual Property.
- g. Normally a start-up owned / co-owned by a faculty member shall be incubated by the AUIC. However, in exceptional cases, if the faculty member wants to incubate outside the University, necessary approval is to be obtained from the University by submitting suitable justifications. Decision of the University shall be final and binding in this case.

- h. For any IPR related issues and any legal infringements pertaining to the start-up, the concerned faculty member involved in the start-up shall be solely responsible.
- i. The sabbatical / leave without pay / or utilizing existing leave as per the norms of the University by a faculty member for associating with a start-up venture, the same shall be taken into account as a continuation of service for promotion / pension benefits / any other forms of academic appraisals for the concerned faculty member.

Student Startups:

- j. Students / scholars shall be permitted to establish a start-up or working part-time in the start-up that already exists in the University under 'AUIIC' while continuing the study.
- k. Students shall be permitted to earn credits for their curricular requirements depending upon the involvement in the start-up activities. This shall be duly endorsed by the concerned start-up and the 'AUIIC'.
- l. Student start-up may be permitted to use the address of the incubator to register the company (start-up) while studying in the University.
- m. The University may exempt Students involved in the start-ups affiliated with the 'AUIIC' to avail a maximum of 50% attendance including claim through ODs, etc. in a semester; or the attendance requirements as per the Academic regulations of the University in vogue.
- n. Students may be permitted to undertake a semester breakup to work with start-ups affiliated with the 'AUIIC', after completion of 4th semester (3 year UG programme) / 8th semester (5 year Integrated programme) / 2nd semester (2 year PG programme) and rejoin the same programme to complete the same with the approval of the University. Appropriate amendments in Academic / Examinations Regulations may be suggested by the 'AUIIC' to the University for approval.
- o. For any IPR related issues and any legal infringements pertaining to the start-up, the

concerned student(s) involved in the start-up shall be solely responsible.

5.3 Strengthening skill development activities towards Innovations and Startups:

- 5.3.1 Widening the activities of 'Alagappa Institute of Skill Development' to offer short-term skill training on Innovation, Entrepreneurship and Venture Development.
- 5.3.2 Efforts be made to offer part-time/full time MBA/ PGDM (Innovation, Entrepreneurship and Venture Development) programme where one can get degree while incubating and nurturing a start-up company.
- 5.3.3 Organizing frequent Workshops / training programmes for the facilitation of Technology Development, Ideation, Creativity, Design thinking, Fund raising, Financial management, Cash-flow management, New venture planning, Business development, Product development, Social entrepreneurship, Product costing, Marketing, Brand-development, Human Resource Management as well as law and regulations impacting on innovation and start-ups.
- 5.3.3 Students shall be encouraged to develop entrepreneurial mind-set through experiential learning by offering them training in cognitive skills (e.g. critical thinking, etc.), by inviting first generation local entrepreneurs or experts to address young minds. Initiatives like idea and innovation competitions, hackathons, bootcamps, exhibitions, etc. by academic and industry personnel, throwing real life challenges, awards and recognition shall be organized at regular intervals.
- 5.3.4 Measures shall be taken for connecting student entrepreneurs with real life entrepreneurs to help the students for understanding real challenges which may be faced by them while going through the innovation funnel for enhancing the probability of success.
- 5.3.5 Spreading awareness among students, faculty and staff about the value of innovation and

entrepreneurship and its role in career development or employability shall be considered a regular awareness agenda.

- 5.3.6 One course related to 'Innovation and Entrepreneurship' may be offered to all the UG students of Alagappa University and its Affiliated Colleges with the approval of appropriate academic bodies.
- 5.3.7 Encouraging all the Departments / units of Alagappa University to organize seminars / webinars / workshops / training programmes for promoting discipline / domain specific innovation and start-up culture among their students in association with IIC-ALU.
- 5.3.8 Introduce academic credits for students who choose entrepreneurship related learning activity at colleges in line with National / State policies.
- 5.3.9 Internship and apprenticeship for students in under graduate programmes of all disciplines may be introduced for a minimum period of 3 months in any industry, in one stretch or in two stretches of minimum of 1½ months, through reworking of the apprenticeship policy of the State Government.
- 5.3.10 A deferred placement support system shall be introduced in consultation with industry as a measure of risk mitigation against failure of student startups.
- 5.3.11 Entrepreneurship awareness programmes shall be organized to inculcate entrepreneurship as a career choice and provide basic foundational understanding among the School going students / rural youth of this region through 'Village Extension Programme'
- 5.3.12 Pedagogical changes shall be analysed and implemented in order to ensure that maximum number of student projects and innovations are based around real life challenges. Learning interventions shall be developed for inculcating entrepreneurial culture. The process shall be constantly reviewed and updated.

5.4 Extending support to social entrepreneurship for a positive social impact and inclusion:

- 5.4.1 'AUIIC' shall extend additional support for start-ups that are eco-friendly.
- 5.4.2 'AUIIC' shall provide special focus to the start-ups creating Social Impact in areas related to Sustainable Development Goals (SDGs) on Water, Food, Health & Sanitation, Energy, Education, Climate change, Waste management, etc. by dedicating a portion of the venture fund.
- 5.4.3 'AUIIC' shall encourage student participation in social impact centric activities through Village Extension Programme.
- 5.4.4 'AUIIC' shall encourage rural entrepreneurship through guidance and support for rural-based start-ups and social entrepreneurship ventures.
- 5.4.5 'AUIIC' will organise Boot Camps and Grand Challenges on specific social, rural and environmental problems under hackathons. Selected innovative solutions shall be awarded an initial grant and follow-on funding for piloting the idea.
- 5.4.6 The 'AUIIC' shall develop a mechanism to adopt technologies/models developed by rural/social entrepreneurs.
- 5.4.7 Prioritize by and for women start-ups. With a special focus, adequate training and sensitization programmes shall be organized to promote women students to become women innovators / entrepreneurs.
- 5.4.8 Training and sensitization programmes on Innovation and Entrepreneurship for transgender entrepreneurs shall be organized.
- 5.4.9 Frequent training, sensitization programmes and proper guidance shall be arranged on Innovation and Entrepreneurship for differently-abled entrepreneurs.
- 5.4.10 Due priority for Start-ups with a women / transgender / differently-abled founders or co-

founders shall be provided for product development and marketing/publicity/participation in fairs and exhibitions.

5.5 Ensuring accessibility, connections and partnerships:

- 5.5.1 Signing of formal MoUs with regional / national / international research labs, research parks, entrepreneurs, investors, angel investors, Govt. & Non-Govt. funding agencies, private organizations under CSR, etc. shall be encouraged and facilitated for ensuring accessibility, connections and partnerships.
- 5.5.2 'AUIIC' shall organize networking events periodically for better engagement of collaborators and open up the opportunities to Students / Scholars / Faculty members / Other staff / Alumni and Public to allow constant flow of ideas and knowledge through meetings, workshops, space for collaboration, internships, teaching and research exchange programmes, clubs, social gatherings, etc.
- 5.5.3 Mechanisms shall be developed to capitalize on the knowledge gained through these collaborations towards converting the ideas of the stakeholders of the University into viable proto-types / products.
- 5.5.4 Co-creation, bi-directional flow/ exchange of knowledge shall be ensured between AUIIC and incubators, science parks, other institutes, etc.
- 5.5.5 The AUIIC shall develop guidelines for forming and managing the relationships with external stakeholders including private industries.
- 5.5.6 Through 'Centre for International Relations', the University shall organise meets, webinars and Video conferences on innovation/entrepreneurship with, NRI/PIO, foreign start-up experts, and global investors to create a global connect for the local start-ups to identify and adopt best practices. Efforts shall also be made to attract NRI/PIO investors to set up local Venture Capitals (VCs) and angel funds.
- 5.5.7 Start-up Summits shall be organised every year at regional and State level to showcase start-ups and business innovations and to provide a platform to stakeholders for collaboration in the start-up ecosystem. Innovation awards be given for high growth start-ups and

stakeholders making outstanding contribution to the start-up ecosystem.

5.6 Innovation / Entrepreneurial Impact Assessment:

5.6.1 An 'AISP Monitoring Committee (AMC)' be constituted by the University in order to monitor and assess the implementation and impact of AISP in Alagappa University. This Committee shall meet bi-annually to assess the impact of implementation of AISP and propose necessary recommendations for the effective implementation of AISP.

5.6.2 The proposed 'AISP Monitoring Committee (AMC)' be constituted with 12 members. Appropriate changes / updations in the AMC shall be made by the AUIC with due approval of the University. The composition of the 'AISP Monitoring Committee (AMC)' shall be as follows:

- The Vice-Chancellor – Chairperson
- The Executive Director, AUIC – Convenor
- One from the Syndicate of the University
- One Internal member (Senior Faculty member)
- Two External experts (Research parks / Industries / Incubators)
- Two Student members (One Research Scholar / One PG Student)
- The Dean, College Development Council
- The Special Officer (Planning & Development)
- The Finance Officer (Ex-officio Member)
- The Convenor, Institution's Innovation Council (Ex-officio Member)

5.6.4 Impact assessment on entrepreneurial initiatives such as pre-incubation, incubation, entrepreneurship education shall be performed regularly using well defined evaluation parameters.

- a) Monitoring and evaluation of knowledge exchange initiatives, engagement of all departments and faculty in the entrepreneurial teaching and learning shall be assessed.
- b) Number of start-ups created, support system provided at the University level and satisfaction of participants, new business relationships created by the University shall be recorded and used for impact assessment.

- c) Impact also be measured for the support system provided by the University to the studententrepreneurs, faculty and staff for pre-incubation, incubation, IPR protection, industrylinkages, exposure to entrepreneurial ecosystem, etc.

5.6.5 Formulation of strategy and impact assessment shall go hand in hand. The information on impact of the activities shall be extensively used for developing and reviewing the entrepreneurial strategy of the University.

5.6.6 Impact assessment for measuring the success shall be in terms of sustainable social, financial and technological impact in the market. For innovations at pre-commercial stage, development of sustainable enterprise model is critical.



Expert Committee for the formulation of Alagappa University – Innovation and Startup Policy (AISP):

S.No.	Name & Designation	Role in the Committee
1.	Dr. D. Karthikeyan I.A.S., Convener Dr. V. Swaminathan, Member Dr. S. Karuppuchamy, Member Vice-Chancellor’s Officiating Committee, Alagappa University	Chairperson
2.	Dr. C. Sekar Registrar i/c NISP Coordinator, Alagappa University	Convener & NISP Coordinator
3.	Dr. K. Sankaranarayanan Member of the Syndicate, Director-USIC, Alagappa University	Member
4.	Prof. K. Baskar (Former Vice-Chancellor, Manonmaniam Sundaranar University) Director, Centre for Technology Development and Transfer (CTDT), Anna University	External Member
5.	Dr. S. Karutha Pandian Director, IPR Cell, Alagappa University	Member
6.	Dr. S. Karuppuchamy Coordinator, Alagappa University Innovation & Incubation Centre Prof. & Head, Dept. of Energy Sciences, Alagappa University	Member
7.	Dr. S. Karutha Pandian Dean – Faculty of Science Sr. Prof. & Head, Dept. of Biotechnology, Alagappa University	Member
8.	Dr. K.R. Murugan Dean – Faculty of Arts Prof. & Head, Dept. of Social Work, Alagappa University	Member
9.	Dr. S. Rajamohan Dean – Faculty of Management Sr. Prof. & Director, Alagappa Institute of Management Alagappa University	Member
10.	Dr. S. Sujatha Malini Dean – Faculty of Education Prof. & Head, Dept. of Special Education and Rehabilitation Science Alagappa University	Member
11.	Dr. V. Sivakumar Dean i/c, College Development Council, Alagappa University	Member
12.	Dr. G. Ilankumaran Director i/c, Entrepreneurship, Innovation Career Hub (EIC Hub) Convener, Institution’s Innovation Council, Alagappa University	Ex-officio Member

Technical & Design Assistance:

- **Dr. C. Balakrishnan,** Asst. Prof., Alagappa Institute of Skill Development

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ALAGAPPA UNIVERSITY

(A State University Established in 1985)
KARAIKUDI - 630 003, Tamil Nadu, India
www.alagappauniversity.ac.in



Date: 03.10.2022

Prof. S. RAJAMOHAN, Ph.D.

Registrar i/c

CERTIFICATE

This is certify that the University approved the NISP policy document proposed by the expert and implementation committee for submission to NISP, uploading in website and its implementation in the campus.

S. Rajamohan
03/10/22
REGISTRAR I/C
REGISTRAR
ALAGAPPA UNIVERSITY
KARAIKUDI-630 003



ALAGAPPA UNIVERSITY

(Established by an Act of the Govt. of Tamil Nadu and recognised by UGC)
Accredited with A+ Grade by NAAC (CGPA : 3.64) in the Third Cycle



EXPERT AND IMPLEMENTATION COMMITTEE MEMBERS FOR NISP

NOMINATED BY THE VICE-CHANCELLOR

Internal Members

S.No	Name of Member	Key Role/ Position assigned in IIC
1	Prof. G. Ravi, Vice-Chancellor Alagappa University	President
2	Prof. S. Rajamohan Registrar i/c Alagappa University	Vice-President, NISP-Convener
3	Prof. B. Vaseeharan Head, Department of Animal Health and Management Alagappa University	National Innovation Startup policy (NISP), Coordinator
4	Prof. C. Vethirajan Director i/c, EIC Hub Alagappa University	Institution Innovation Council, Coordinator
5	Dr. K. Sankaranarayanan Instrumentation Center, Director	IPR Cell coordinator
6	Prof. A. Veeraravi Professor, Dept. Biotechnology	Innovation in Higher Education Institution , coordinator
7	Dr. V. Dharuman Assistant Professor, Department of Bioelectronics and Biosensors Alagappa University	Innovation Activity Coordinator, ATAL coordinator
8	Prof. J. Jeyakanthan Director, Alagappa University Ranking Cell, Coordinator-NIRF Alagappa University	NIRF Coordinator(ALU-IIC)
9	Prof. S. Karuppuchamy Head, Department of Energy Science Alagappa University	Technology Transfer Center
10	Prof. N. Anbazhagan Head, Department of Mathematics Alagappa University	University Business Collaboration Center
11	Prof. G. Ilankumaran	Alagappa Institute of Management
11	Prof. K. Gurunathan	Dean, Faculty of Science
12	Prof. S. Rajmohan	Dean, Faculty of Management
13	Prof. P. Sivakumar	Dean, Faculty of Education
14	Prof. S. Thanuskodi	Dean, Faculty of Arts

External members

15	Ms. Gita Chengappa General Manager Tiruchirappalli Regional Engineering College-Science and Technology Entrepreneurs Park (TREC-STEP), Tiruchirappalli-620015	Nearby Incubation Centre
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Karaikudi - 630 003.
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16	Dr. V. Swaminathan Managing Director, Galaxy Research Technologies, 658-03-618, Jurong West Street 65, Singapore-643658	Startup / Alumni Entrepreneur
17	Mr. P. Sivakumar , Chief Executive Officer, NABARD's Madurai Agribusiness Incubation Forum (MABIF) Agricultural College and Research Institute, Madurai	FI / Bank / Investor / Angel Investor / VC

Submitted for perusal and orders are requested to approve the expert and implementation committee of AISP for NISP activities and to upload the same in NISP and Alagappa University web portals and its implementation in University campus.


DIRECTOR i/c


REGISTRAR i/c


VICE-CHANCELLOR



EDII-IEDP Alagappa University Hub's Annual Report (2021-2022)

Submitted to

Entrepreneurship Development and Innovation Institute (EDII)

(An Autonomous Society of the Government of Tamil Nadu)

Dr. G. Ilankumaran

Hub Coordinator

Mr. J. Arumai Ruban

Field Coordinator

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Introduction

Academic Innovation and Entrepreneurship Development Program (IEDP or AIEDP) for entrepreneurship and innovation development for all Colleges, Polytechnics, ITI's, etc. through Hub and Spoke Model.

EDII-TN is an autonomous, Non-Profit, Apex organization in the field of entrepreneurship education and self-employment promotion in the state of Tamil Nadu, established in 2001.

It is administered by Department of Micro, Small and Medium Enterprises. Innovation infrastructure includes Universities & Colleges, Research Institutions, Laboratories and Start-up companies. Taking note of the Vision 2023 statements of the Government of Tamil Nadu, the Entrepreneurship Development and Innovation Institute, has launched a comprehensive program i.e. Academic Innovation and Entrepreneurship Development Program.

Through Hub and Spoke model, EDII-TN under the Academic Innovation and Entrepreneurship Development Program has connected with over 800 Spoke colleges through shortlisted resourceful universities or colleges as over a dozen hub institutions for the spoke colleges across the state in facilitating innovation and entrepreneurship among students and faculties. 23 hubs are established and 21 field coordinators are working for promoting entrepreneurship development in all over Tamil Nadu.

The Entrepreneurship Development and Innovation Institute, Tamil Nadu (EDII-TN) has recognized Alagappa University, Karaikudi as its Hub in Sivagangai Region which includes districts of Sivagangai and Ramnad. There are 41 higher education spoke institutions are on board with this hub from the above districts.

TOP Management Orientation Programme

One Day Top Management Orientation Programme on IEDP Programme in Alagappa University EDII- IEDP Hub, Karaikudi was jointly organized by Entrepreneurship Development and Innovation Institute (EDII), Chennai and EIC Hub, Alagappa University on 30.07.2021. There were 37 Participants from 22 Arts and Science Colleges and 1 Polytechnic College in and around Sivagangai and Ramnad region and most of them were Principals and Faculty members cum Entrepreneurship coordinators from their institutions.



INNOVATION & ENTREPRENEURSHIP AWARENESS PROGRAMME

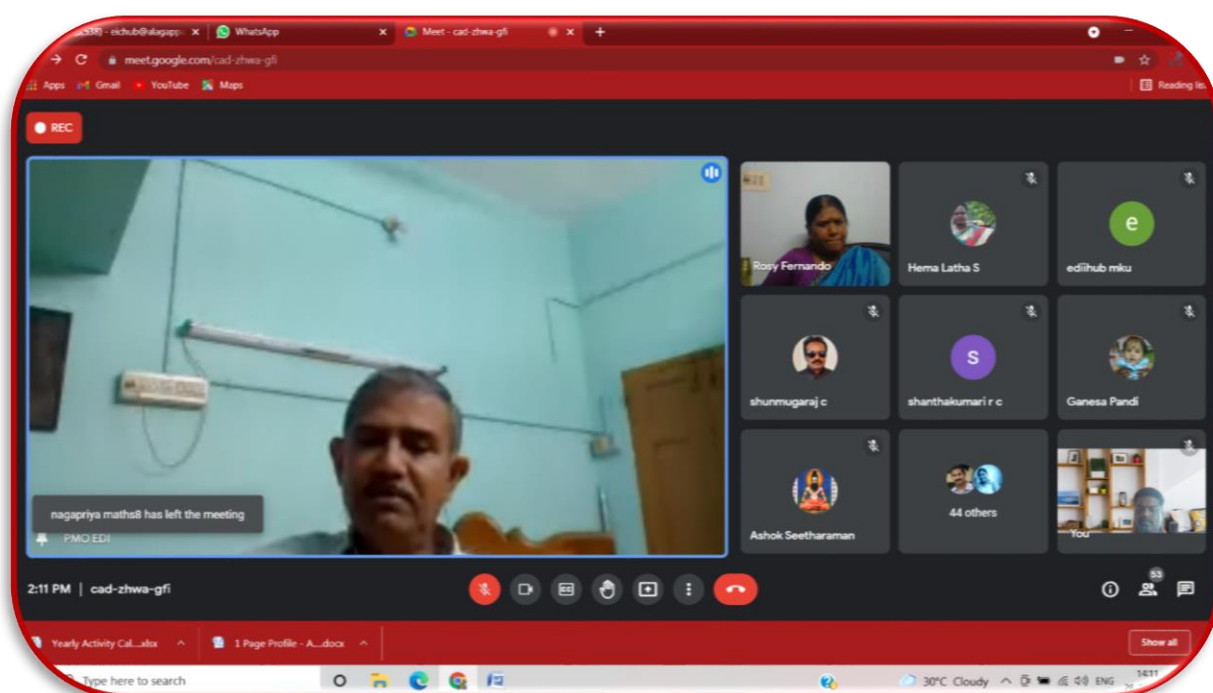
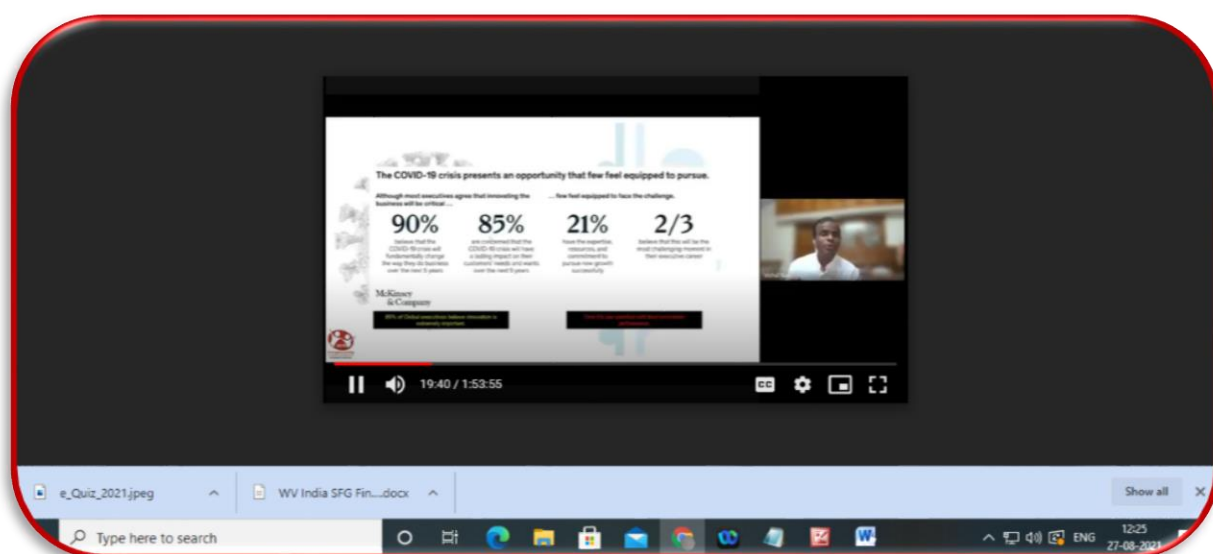
IEDP Awareness is a one day programme held on Hub and spoke institutions. The main objective of this programme is to create an awareness among the college Students and encourage them to become an Entrepreneurs and Innovators.

Our Alagappa University Hub has organized nearly 12 Awareness programme both in Physical and virtual mode. Nearly 3000 Students were participated and got benefitted through this programme.



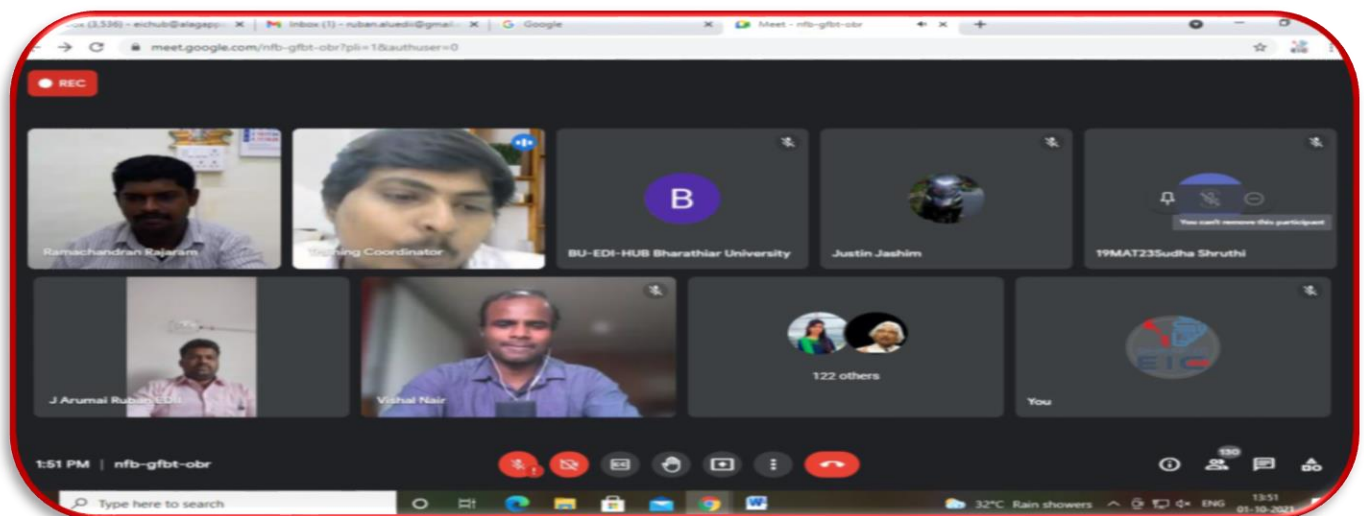
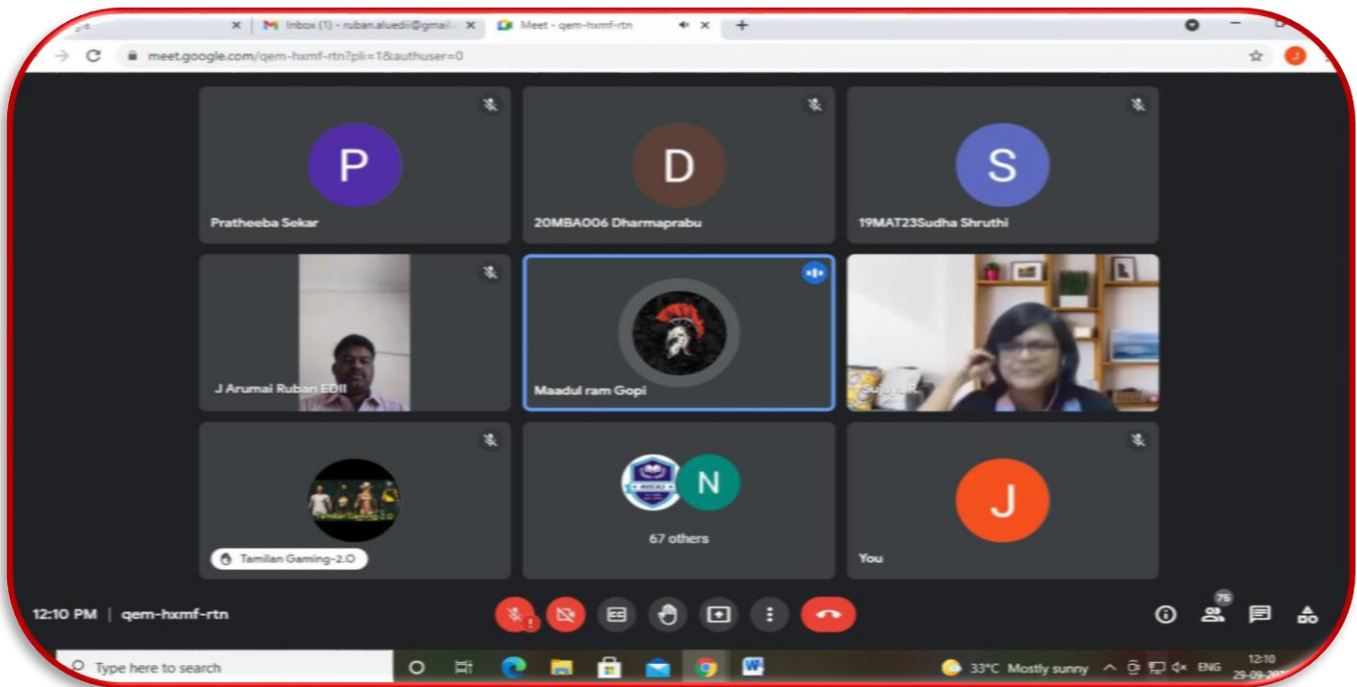
Faculty Development Programme

Five Days Online Faculty Development Programme (FDP) on “Entrepreneurship Development Skills” in collaboration with Entrepreneurship Development Innovation Institute (EDII), Tamilnadu and Entrepreneurship Innovation and Career Hub, Alagappa University held for five days from 24.08.2021 to 28.08.2021. There were 42 Faculty members from 21 Institutions have attended this Online FDP.



E-Leaders Workshop

Three Days E- Leaders Workshop on “Entrepreneurship Development Skills” in collaboration with Entrepreneurship Development Innovation Institute (EDII), Tamil Nadu and Entrepreneurship Innovation and Career Hub, Alagappa University held for three days from 29.09.2021 to 01.10.2021. There were 60 students from 30 Institutions have attended this Online E-Leaders Workshop.



One Million Ideas Awareness Programme

EDII - TN has launched a website to create an awareness among college students to know more about the IEDP schemes and activities. The objectives of this website is for the students to learn the entrepreneurial skills anywhere and at any time. Our ALU hub has organized 12 Awareness programme through physical mode. Nearly 5000 Students registered in this programme and got certificate.

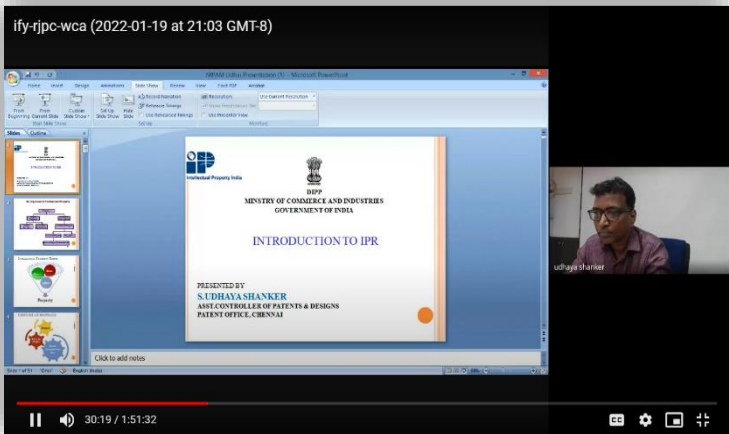


Intellectual Property Rights (IPR) Workshop

The EDII - IEDP Alagappa University Hub has organized the Three Day Workshop on IPR & Entrepreneurship for the Faculty members and Research Scholars of IEDP Alagappa University Hub spoke institutions and nearby Hubs spoke institutions on 20.01.2022 at 10:30 am. A total of 120 participants have attended the First Day of the workshop.



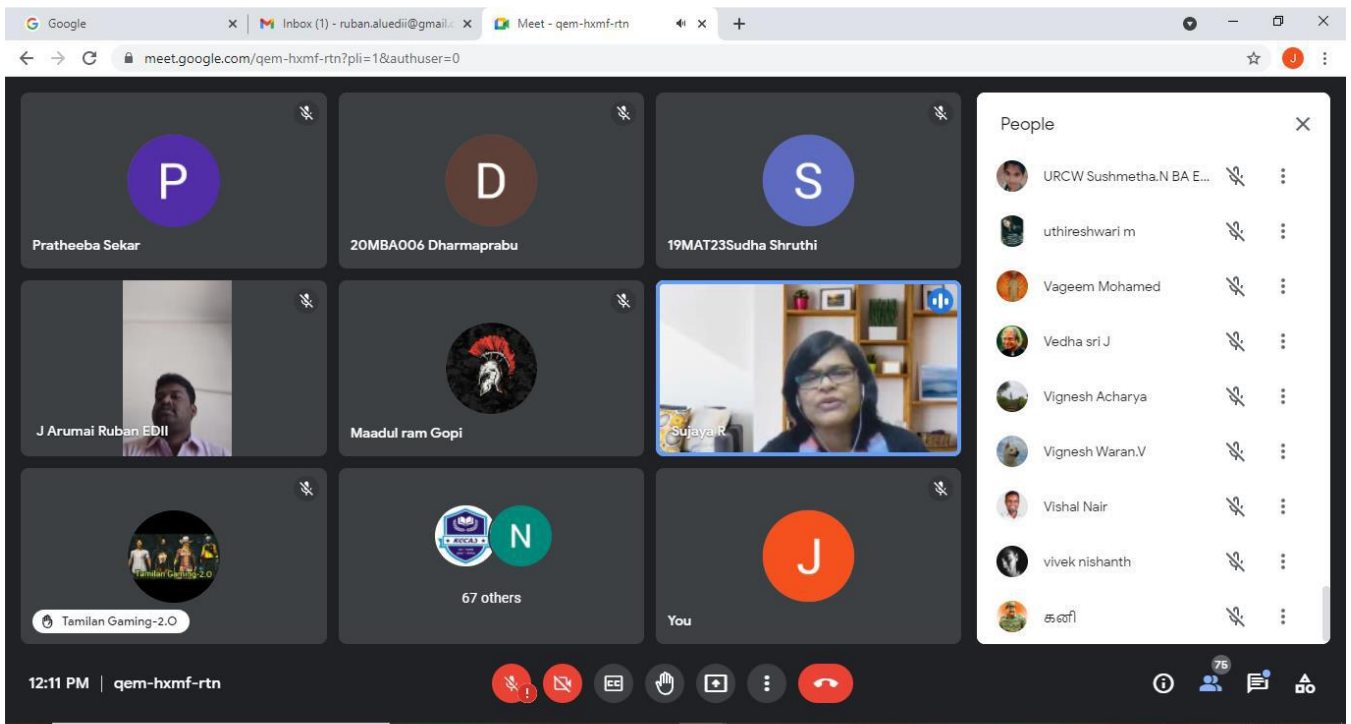
Dr.G. Ilankumaran, Director & Hub Coordinator, EIC & IEDP Hub, Alagappa University, Karaikudi welcomed the gathering. Prof. S. Karutha Pandian, Director - IPR Cell, Dean- Faculty of Science, Senior Professor & Head, Dept. of



Biotechnology, Alagappa University, has been delivered the inaugural address. Mr. A. Selvakumar Training Coordinator, Entrepreneurship Development and Innovation Institute, Chennai has felicitated the gathering. Keynote address has given by Resource Person. Mr. P. Udhayashanker, Assistant Controller of Patents & Designs, Patent Office, Chennai on the topic of Introduction of IPR. Mr. J. Arumai Ruban Field Coordinator, EDII- IEDP Hub Alagappa University has proposed the vote of thanks.

Design Thinking Workshop

EDII-TN has organized a Design Thinking Workshop for Spoke college students. This workshop aims to create an Innovation and Business mind-set for the students. It has conducted for three days 16. 02.2022 to 18.02.2022 through online in Zoom platform. The sessions about two hours (09:30 a.m. to 11:30 a.m). A total of 45 students from 15 institutions has participated in our Hub.



Spoke Review Meeting

The meeting of the Alagappa University EDII-IEDP Hub for the year 2021–2022 was held on March 11th, 2022 at 02:00 pm in Physical mode to review the performance of the Spoke Institutions (2021–2022) and plan for the activities of IEDP 2022. This meeting was held at EDII – IEDP Hub at EIC Hub, Alagappa University, Karaikudi. A total of 40 EDC Coordinators attended the Review Meeting.

The meeting commenced with a welcome address by Mr. J. Arumai Ruban, Field Coordinator, Alagappa University EDII- IEDP Hub, Karaikudi. Dr. G. Ilankumaran, Hub Coordinator of the Alagappa University EDII-IEDP Hub, Karaikudi, offered a presidential address. The Hub Coordinator of the Alagappa University EDII-IEDP Hub Dr. G. Ilankumaran, presented the report of various Entrepreneurship activities conducted during for the year 2021-22 and he complimented the efforts taken by all the EDC Coordinators to organize events in order to nurture the Entrepreneurship and Innovation and Start-up culture among the students of the Spoke Institution.



Tamil Nadu Student Innovator (TNSI) 2021

Tamil Nadu Student Innovators Programme is an initiative of EDII-TN to encourage student innovators/entrepreneurs from all over Tamil Nadu. TNSI was introduced in 2016 and organized region-wise across Tamil Nadu. The programme includes series of events like awareness and ideation programmes, boot camps and final pitch. Innovative ideas are selected by a panel of Jury Members from the Start-up Ecosystem and award them Rs. 1.00 lakh cash prize.

Awareness



TNSI 2021 has started from November 25, 2021, Initially the first stage i.e Awareness programme and registration has started from Nov 25, 2021 to Jan 7, 2022. Alagappa University Hub have conducted 14 Awareness programmes in various spoke colleges and 447 ideas were registered into TNSI Web Portal.



TNSI Ideation

EDII-TN has conducted Ideation Camp association with IEDP Thigarajar College of Engineering Hub and IEDP Kamaraj University Hub, Madurai from 21.03.2022 to 23 .03.2022 at TBM Hall, Thigarajar College of Engineering, Madurai and Department of MBA Kamaraj University, Madurai. 45 teams have participated in the Ideation camp from Alagappa University Hub. Resource Person Mr. Vishal Nayer handled the session.



TNSI Boot Camp

EDII-TN has conducted Boot Camp association with IEDP Thigarajar College of Engineering Hub Madurai from 06.04.2022 to 08.04.2022. at TBM Hall, Thigarajar College of Engineering, Madurai. 6 teams have participated in the Boot camp from Alagappa University Hub. Resource Person Mr. Jesu Raja handled the three days session.



TNSI Final Pitch

EDII-TN has conducted the TNSI 2021 Final Pitch association with Centre for Entrepreneurship Development, College of engineering Anna University Hub, Chennai held on 12.04.2022 at 09.00 am TAG Auditorium, College of engineering Anna University, Chennai. One team has participated in the Final Pitch from Alagappa University Hub.



S.No	Ideas Count	Colleges Count
Ideas Registrations at Web Portal		
1	447	23
Ideation @ TCE Hub & MKU Hub, Madurai		
2	47	10
Boot Camp @ TCE Hub, Madurai		
3	06	05
Final Pitch @ Anna University, Chennai		
4	01	01
No Winners		

Promotional Activities – Cheque Issuing

EDII –TN proposed to organize 200 Promotional activities on Entrepreneurship in Spoke colleges with the budget support of Rs. 20 lakhs. From the spoke institutions of Our Hub 19 proposals were received out of which, 6 proposals were selected by EDII-TN based on the norms prescribed.



Dr.Zahir Husain College, Ilayankudi



Ithaya College for Women, Sarugani



Pandian Saraswathi Engg.College, Arasanoor



Causannel College of Arts and Science, Muthupettai



Thassim Beevi College of Arts and Science for Women, Kilakarai



Ananda College, Devakottai

Promotional Activities - Programme

Selected 6 Spoke Institutions have conducted the Promotional activities which are listed below

1. Business Plan Preparation workshop
2. Design Thinking Workshop
3. EDII Entrepreneurship Course
4. Start-up/Entrepreneur showcase in their institution
5. Workshop on IPR - Minimum 40 students/Faculty from the institution
6. Workshop in the Institution Innovation Council
7. Starting Campus Company in the institution.
8. Any other programme designed by the institution to promote entrepreneurship



விழிப்புணர்வு முகாம்

ராமநாதபுரம், டிச.20-
 ராமநாதபுரம் முகம்மது முகம்மது முகாம் நடந்தது.
 சதக் ஹமீது மகலிர் முதல்வர் ராஜம்
 கலை மற்றும் அறிவியல் தலைமை வகித்தார். அழ
 கல்லூரியில் காரைக் முனைவோர் மைய பயிற்
 குடி அழகப்பா பல்கலை சியாளர் அருமை ரூபன்
 தொழில் முனைவோர் சிறு, குறு சுயதொழில்
 மையம் மற்றும் கல்லூரி செய்யும் முறை குறித்தும்,
 தொழில் முனைவோர் கடைபிடிக்க வேண்டிய
 மையம் சார்பில் தொழில் புதிய யுக்திகள் குறித்து
 முனைவோர் விழிப்பு விளக்கினார்.



ஸ்ரீ இராஜ ராஜன் பொறியியல் மற்றும் தொழில்நுட்பக் கல்லூரியில் (15/12/2021) அன்று கல்லூரி அரங்கில் தொழில் முனைவோர் விழிப்புணர்வு நிகழ்ச்சி நடைபெற்றது. ஸ்ரீ இராஜ ராஜன் பொறியியல் மற்றும் தொழில்நுட்பக் கல்லூரியின் மூனை முதல்வர் ரோசியா V. மகாலிங்க கரேஜ் அவர்கள் வரவேற்புரை நல்கினார். சிறப்பு விருந்தினராக விசீய். அருமை ரூபன் (Field coordinator of EDC, Alagappa University) அவர்கள் கலந்து கொண்டு சிறப்புரைபாற்றினார். அவரது உரையில் மாணவர்களுக்கு தொழில் முனைவோர் பிரிவுகளையும் அதனால் கிடைக்கும், அரசு கொடுக்கும் ஊக்கத் தொகை மற்றும் சலுகைகள் பற்றியும் மாணவர்களுக்கு மிகச்சிறப்பாக விளக்கினார். இறுதியாக ஸ்ரீ இராஜ ராஜன் பொறியியல் மற்றும் தொழில்நுட்பக் கல்லூரியின் உதவிப் பேராசிரியர் திருமதி. மீனா தேவி அவர்கள் நன்றிபுரை நல்கினார் இதில் பல்வேறு கல்லூரி மாணவர்கள் கலந்து கொண்டனர்.

கருத்துப் பட்டறை

இளையான்குடி, பிப்.26
 இளையான்குடி டாக்டர் ஜாகீர் உசேன் கல்லூரி தொழில் முனைவோர் கழகம் சார்பில் பொருள் வடிவமைப்பு நினைத்தல் பற்றிய கருத்துப் பட்டறை முதல்வர் அப்பாஸ் மந்திரி தலைமையில் நடைபெற்றது. வணிகவியல் துறைத் தலைவர் நைனா முகமது வரவேற்றார். மதுரை தொழில்பேட்டை உதவி இயக்குனர் உமா சந்திரிகா சிறப்புரையாற்றினார்.

பொருளாதாரத் துறை பேராசிரியர் முகமது யாசின் நன்றி கூறினார்.

நிகழ்ச்சியில் தொழில் முனைவோர் கழகத்தினர், மாணவர்கள், ஆசிரியர்கள், அலுவலர்கள் உட்பட பலர் கலந்து கொண்டனர். ஒருங்கிணைப்பாளர் நாசர் ஏற்பாடுகளை செய்திருந்தார்.

இணையவழி கருத்தரங்கம்

இளையான்குடி, மார்ச் 5-
 இளையான்குடி டாக்டர் சாகீர் உசேன் கல்லூரி தொழில் முனைவோர் மேம்பாட்டு கழகம், தமிழக அரசின் தொழில் முனைவோர் மேம்பாடு மற்றும் புத்தாக்க நிறுவனம் இணைந்து இணையவழியில் விவாபாரம் திட்டம் தயாரித்தல்" எனும் தலைப்பில் கருத்தரங்கம் நடைபெற்றது. வேதியியல் துறை உதவி பேராசிரியர் அபீராஸ் அனவரை யும் வரவேற்று பேசினார். தொழில் முனைவோர் மேம்பாட்டு கழக ஒருங்கிணைப்பாளர் உதவிப்பேராசிரியர் நாசர் சிறப்புவிருந்தினரை அறிமுகம் செய்தார். சிறப்பு விருந்தினராக சிவகங்கை வடலி சுய உதவி குழு தலைவர் கஸ்தூரி கலந்துகொண்டு மாணவ-மாணவிகள் தொழில் தொடங்குவதற்கு விவாபாரத் திட்டம் எவ்வாறு தயார் செய்ய வேண்டும் என்பது குறித்தும் பேசினார். தமிழ்த் துறை உதவிப் பேராசிரியர் ஷேக் அப்துல்லா நன்றி கூறினார்.

இணைய வழியில் நடைபெற்ற தொழில் முனைவோர் மேம்பாட்டு கழகம் மூன்றாம் நாள் கருத்துப்பட்டறை.



முனைவர் S. நாசர் சிறப்புவிருந்தினரை அறிமுகம் செய்தார். சிறப்பு விருந்தினராக சிவகங்கை, 9 ஜெம்ஸ் அக்ரோFuels நிறுவன, மேலாளர் திரு. M.S. ராகேஷ் அவர்கள் கலந்துகொண்டு உற்பத்திப்பொருள்களின் உரிமைகள் பற்றியும் அதை மற்ற நிறுவனங்கள் பயன்படுத்த முடியாது என்பதை பற்றி விரிவாக கூறினார். மேலும் தேவை அறிந்து தொழில் செய்யும் யுக்திகள் குறித்து விவரித்தார். பேராசிரியர்கள், 62 மாணவ-கல்லூரி தொழில் முனைவோர் மேம்பாட்டு கழகம் இணைந்து 10/03/2022 அன்று "அறிவுசார் சொத்துரிமைகள்" என்னும் அப்துல் முத்தலிப் நன்றி கூறினார். இணையவழியில் நடைபெற்றது. தமிழக அரசின் தொழில் முனைவோர் மேம்பாட்டு மற்றும் புத்தாக்க நிறுவனத்துடன் இணைந்து வரவேற்றார். தொழில் முனைவோர் நடைபெறும் மூன்றாவது மேம்பாட்டு கழக ஒருங்கிணைப்பாளர் கருத்துப் பட்டறையாகும்.

இளையான்குடி டாக்டர் சாகிர் உசேன் கல்லூரியில் சுயதொழில் திட்டம் குறித்த கருத்தரங்கம் நடைபெற்றது.



மேம்பாட்டு கழக ஒப்பினைப்பாளர் முனைவர் S. நாசர் சிறப்பு விருந்தினர்களை அறிமுகம் செய்தார். சிறப்பு விருந்தினராக சிவகங்கை மாவட்ட தொழில் மையம், உதவி இயக்குனர் திரு. S. கணேசன் மற்றும் காரைக்குடி அழகப்பா பல்கலைக்கழக தொழில் முனைவார் மேம்பாட்டு கழக இயக்குனர் முனைவர் G. இளங்குமரன் ஆகியோர் கலந்து கொண்டு சுயதொழில் மேம்பாட்டு திட்டங்கள் மற்றும் கடனுதவி

திட்டங்கள் குறித்தும் பேசினர். திகழ்வில் கல்லூரி தொழில் முனைவார் மேம்பாட்டு கழகம் சார்பாக நடைபெற்ற கருத்தரங்கில் பங்குபற்ற மாணவ-மாணவிகளும் மற்றும் ஆசிரியர்களும் சான்றிதழ்கள் வழங்கப்பட்டது. இறுதியாக வணிகவியல்துறை உதவிப்பேராசிரியர் முனைவர் P. ஜாஹிர் உசேன் நன்றி கூறினார்.

சிவகங்கை, ஏப்ரல் 16: வரவேற்றார்: கல்லூரி முதல்வர் முனைவர் A. அப்பாஸ் மந்திரி அவர்கள் தலைமையிலான அறிவு இயக்குனர் முனைவர் A. வடினூல்லா கான் மற்றும் வணிகவியல்துறை உதவிப்பேராசிரியர் முனைவர் S.A. சம்கதின் இப்பிராஹிம் ஆகியோர் வாழ்த்துரை வழங்கினர். கல்லூரி தொழில் முனைவார் முனைவர் M. பவுசியா கல்தானா கல்லூரி தொழில் முனைவார்

இணையவழி கருத்தரங்கம்

இணையான்குடி, மார்ச் 16- தமிழக அரசின் தொழில் முனைவோர் மேம்பாட்டு மற்றும் புத்தாக்க நிறுவனம் மற்றும் கல்லூரிகள் தொழில் முனைவோர் மேம்பாட்டு கழகம் இணைந்து "அறிவுசார் சொத்தரிமைகள்" எனும் தலைப்பில் இணையவழியில் கருத்தரங்கம் நடைபெற்றது. விலங்கியல் துறை உதவி பேராசிரியர் பிரமுகமது அனைவரையும் வரவேற்றார். தொழில் முனைவோர் மேம்பாட்டு கழக ஒருங்கிணைப்பாளர் பேராசிரியர் நாசர் சிறப்பு விருந்தினரை அறிமுகம் செய்தார். சிறப்பு விருந்தினராக சிவகங்கை 9 ஜெம்ஸ் அக்ரோ பியல்ஸ் நிறுவன மேலாளர் ராகேஷ் கலந்துகொண்டு உற்பத்தி பொருள்களின் உரிமைகள் பற்றியும் அதை மற்ற நிறுவனங்கள் மாற்ற முடியாது என்பது பற்றியும் விவாக எடுத்தாரைத்தார். மேலும் தேவை அறிந்து தொழில் செய்யும் யுக்திகள் குறித்து விவரித்தார். கருத்தரங்கில் இணையவழியில் 62 மாணவ, மாணவிகள், பேராசிரியர்கள் மற்றும் அலுவலர்கள் கலந்து கொண்டனர். வணிகவியல் துறை உதவி பேராசிரியர் அப்துல் முத்தலிப் நன்றி கூறினார்.

சுயதொழில் திட்ட கருத்தரங்கம்

இணையான்குடி, ஏப்.14- இணையான்குடி டாக்டர் சாகிர் உசேன் கல்லூரி தொழில் முனைவோர் மேம்பாட்டு கழகம் சார்பாக சுயதொழில் திட்டம் கருத்தரங்கம் நடைபெற்றது. வணிகவியல் துறை உதவிப் பேராசிரியர் பவுசியா கல்தானா வரவேற்றார். கல்லூரி முதல்வர் அப்பாஸ் மந்திரி தலைமை தாங்கினார். சுயநிதி பாடப் பிரிவு சபினூல்லாகான் மற்றும் வணிகவியல் துறை உதவிப் பேராசிரியர் சம்கதின் இப்பிராகிம் ஆகியோர் வாழ்த்துரை வழங்கினர். கல்லூரி தொழில் முனைவோர் மேம்பாட்டு கழக ஒருங்கிணைப்பாளர் நாசர், சிவகங்கை மாவட்ட தொழில் மைய உதவி இயக்குனர் கணேசன் மற்றும் காரைக்குடி அழகப்பா பல்கலைக்கழக தொழில் முனைவோர் மேம்பாட்டு கழக இயக்குனர் இளங்குமரன் ஆகியோர் சுய தொழில் மேம்பாட்டு திட்டங்கள் மற்றும் கடன் உதவி திட்டங்கள் குறித்தும் பேசினர். மாணவ- மாணவிகளுக்கு மற்றும் ஆசிரியர்களுக்கு சான்றிதழ் வழங்கப்பட்டது. வணிக வியல் துறை உதவி பேராசிரியர் ஜாகிர் உசேன் நன்றி கூறினார்.

EDII – IEDP Alagappa University Hub’s

Spoke Institutions List

S.No	Spoke Institutions Name
1.	Alagappa University, Karaikudi
2.	Alagappa Chettiar Government College of Engineering and Technology, Karaikudi
3.	Alagappa Government Arts College, Karaikudi
4.	Ananda College, Devakottai
5.	Annai Scholastica Arts and Science College for Women, Rameswaram
6.	Arumugam Pillai Seethai Ammal College, Tirupathur
7.	Bharat Ratna Dr. A.P.J. Abdulkalam Government Arts and Science College, Rameswaram
8.	Caussanel College of Arts and Science, Muthupettai.
9.	Dr.Umayal Ramanathan College for Women, Karaikudi
10.	Dr.Zakir Husain College, Ilayangudi
11.	Government Arts and Science College, Paramakudi-AU-64
12.	Government Arts and Science College, Thiruvadanai
13.	Government Arts College for Women, Ramnad
14.	Government Arts College for Women, Sivagangai
15.	Government Arts College, Paramakudi
16.	Idhaya College for Women, Sarugani.
17.	Madurai Sivakasi Nadars Pioneer Meenakshi Women’s College, Poovanthi.
18.	Mohamed Sathak Hamid College Arts and Science for Women, Ramnad
19.	Morning Star Arts and Science College for Women, Pasumpon
20.	Nachiappa Swamigal Arts and Science College, Koviloor
21.	P.S.Y Arts and Science College, Arasanoor
22.	Pandian Saraswathi Yadav Engineering College, Arasanoor
23.	Pasumpon Thiru Muthuramalinga Thevar Memorial College, Kamuthi
24.	Puratchi Thalaivar Dr MGR Arts and Science College for Women, Uchipuli
25.	Raja College of Arts and Science, Vedhalai
26.	Raja Doraisingam Govt. Arts College, Sivagangai
27.	Seethalakshmi Achi College for Women, Pallathur
28.	Sethupathy Government Arts College, Ramnad
29.	Sree Sevugan Annamalai College, Devakottai
30.	Sri Muthalamman Arts and Science College Women, Paramakudi
31.	Sri Raaja Raajan College of Engineering and Technology, A.Pudur
32.	Sri Sarada Niketan College for Women, A.Pudur
33.	St. Joseph Arts and Science College for Women, Singampunari
34.	St. Justin Arts and Science College for Women, Cholapuram
35.	Syed Ammal Arts and Science College, Ramnad
36.	Syed Hameedha Arts and Science College, Ramnad
37.	Thassim Beevi Abdul Kader College for Women, Kilakarai
38.	University College of Engineering, Ramanathapuram
39.	V.S.S. Government Arts College, Pulankurichi
40.	Velu Manoharan Arts and Science College for Women, Ramanathapuram
41.	Vidhyaa Giri College of Arts and Science, Pudukkottai

**Alagappa Institute of Skill Development Programme
(July 2022- April 2023)**

S.No	Date	Programme Name	Participants
EDII – IEDP Alagappa University Hub			
1.	22.07.2022	Spoke Institutions Review Meeting	25
2.	11.10.2022- 13.10.2022	Faculty Development Programme	43
3.	14.10.2022- 15.10.2022	E Leaders Workshop	52
4.	01.11.2022- 02.11.2022	Design Thinking Workshop	50
5.	15.11.2022	Entrepreneurship Promotional Activities for the Outgoing Students	120
6.	30.01.2023- 31.01.2023	School Innovation Development Project (SIDP) Boot Camp for School Students	123
7.	14.02.2023	Spoke Institutions Review Meeting	29
8.	21.02.2023- 22.02.2023	Tamil Nadu Student Innovator (TNSI) 2022 Ideation Camp	172
9.	16.03.2023- 17.03.2023	Intellectual Property Rights (IPR) Workshop	64
Institutions' Innovation Council (IIC) Programme			
12.	22.11.2022	My Story - A Motivational Session by Successful Innovators	50
13.	25.11.2022- 26.11.2022	Two Day Workshop on Problem Solving and Ideation	50
14	30.11.2022	Internal Hackathon and reward Best ideas for YUKTI – NIR -2022	50
15	14.02.2023	Entrepreneurship, Skill Attitude and Behavior Development	75
16	24.02.2023	One Day Workshop on Internal Hackathon and reward Best ideas for YUKTI – NIR -2023	50
Alagappa Institute of Skill Development (AISD) Programme			

17.	17.03.2023	Facon Fest 2023	220
18.	01.04.2023	Parent Teachers Meet	102
19.	02.04.2023	Alumni Meet	65

Prof. C. Vethirajan, Director i/c, AISD, Alagappa University

EDII – IEDP Alagappa University Hub Programme

Spoke Review Meet – 22.07.2022



	
Programme Schedule	
> 02.30 pm – 02.35 pm	Invocation Tamil Thai Vaazhthu, Vallal Vaazhthu
> 02.36 pm – 02.40 pm	Welcome Address Mr. J. Arumai Ruban Field Coordinator, EDII – IEDP Alagappa University Hub
> 02.41 pm – 02.45 pm	Honoring the New Hub Coordinator
> 02.46 pm – 02.55 pm	Felicitations Address Dr. Irfan Ahmed M.S Director-Research, Industry-Institute Relations, Thassim Beevi Abdul Kader College for Women, Kilakarai.
> 02.56 pm – 03.10 pm	Presidential Address Prof. C. Vethirajan Director i/c & Hub Coordinator, EIC Hub & EDII - IEDP Hub, Alagappa University, Karaikudi
> 03.11 pm – 03.25 pm	Annual Plan Discussion
> 03.26 pm – 03.45 pm	IVP Presentation Mr. T. Ponvel Murugan Assistant Professor & EDC Coordinator, Pandiyar Saraswathi Yadav Engg. College, Arasanoor.
> 03.46 pm – 03.55 pm	Feedback Session
> 03.56 pm – 04.00 pm	Vote of Thanks Dr. AR. Chitra Juliet Mangeshkar Assistant Professor & EDC Coordinator Seethalakshmi Achi College for Women, Pallathur

Faculty Development Programme

ALAGAPPA UNIVERSITY
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Karaikudi - 630003, Tamil Nadu, India
www.alagappauniversity.ac.in

Entrepreneurship, Innovation and Career Hub
&
Entrepreneurship Development and Innovation Institute, Chennai

Cordially invite you to the **Inaugural Function** of
Three Day
Faculty Development Program on
Mentoring Entrepreneurship &
Innovation Skills

On Tuesday, the 11th October 2022 at 10:00 a.m.
in the Seminar Hall, EIC Hub- Alagappa Institute of Skill Development

Prof. C. VETHIRAJAN
Director i/c, EIC Hub, Alagappa University
Welcomes

Prof. G. RAVI
Vice-Chancellor
Alagappa University, Karaikudi
Presides

Mrs. GAURI GOPINATH
Master Trainer
Entrepreneurship Development and Innovation Institute
Tamil Nadu
Inaugurates

Dr. V. DHARUMAN
Assistant Professor
& IIC Coordinator, Alagappa University
Vote of Thanks

Coordinator	Convenor	Registrar i/c
J. Arumai Ruban	Prof. C. Vethirajan	Prof. S. Rajamohan

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(A State University Established in 1985)
Karaikudi - 630003, Tamil Nadu, India
www.alagappauniversity.ac.in

Entrepreneurship, Innovation and Career Hub
&
Entrepreneurship Development and Innovation Institute, Chennai

Cordially invite you to the **Valedictory Function** of
Three Day
Faculty Development Program on
Mentoring Entrepreneurship &
Innovation Skills

On Thursday, the 13th October 2022 at 3:45 p.m.
in the Seminar Hall, EIC Hub- Alagappa Institute of Skill Development

Prof. C. VETHIRAJAN
Director i/c, Entrepreneurship, Innovation and Career Hub,
Alagappa University
Welcomes

Prof. S. RAJAMOHAN
Registrar i/c
Alagappa University
Presides

Mr. J. ARUMAI RUBAN
Field Coordinator
EDII - Tamil Nadu
Vote of Thanks

Coordinator	Convenor	Registrar i/c
J. Arumai Ruban	Prof. C. Vethirajan	Prof. S. Rajamohan



Prof. C. Vethirajan Addressing



Honouring Vice Chancellor Prof. Dr. G. Ravi



Honouring the Registrar Prof. S. Rajamohan

E-Leaders Workshop

ALAGAPPA UNIVERSITY

Alagappa Institute of Skill Development
Entrepreneurship Innovation and Career Hub & IIC-ALU
&
**ENTREPRENEURSHIP DEVELOPMENT
AND INNOVATION INSTITUTE**
(Government of Tamil Nadu)

Cordially invite you to the **Inaugural Function of
Two Day**

E-Leaders Workshop
Venue: Seminar Hall, AISD

Prof. C. VETHIRAJAN
Director i/c, EIC Hub, Alagappa University
Welcomes

Dr. R. SWAMINATHAN
Syndicate Member,
Alagappa University
Presides

Mrs. GAURI GOPINATH
Master Trainer
Entrepreneurship Development and Innovation Institute, Tamil Nadu
Inaugurates

Dr. V. DHARUMAN
Assistant Professor
Vote of Thanks

14 OCTOBER 2022
FRIDAY
Time: 10:00 am.

Coordinator: Mr. J. Arumai Ruban
Co-venor: Prof. C. Vethirajan
Registrar i/c: Prof. S. Rajamohan

ALAGAPPA UNIVERSITY

Alagappa Institute of Skill Development
Entrepreneurship Innovation and Career Hub & IIC-ALU
&
**ENTREPRENEURSHIP DEVELOPMENT
AND INNOVATION INSTITUTE**
(Government of Tamil Nadu)

Cordially invite you to the **Valedictory Function of
Two Day**

E-Leaders Workshop
Venue: Seminar Hall, AISD

Prof. C. VETHIRAJAN
Director i/c, EIC Hub, Alagappa University
Welcomes

Prof. E. KANNAPIRAN
Controller of Examinations,
Alagappa University
Presides

Mrs. GAURI GOPINATH
Master Trainer
Entrepreneurship Development and Innovation Institute, Tamil Nadu
Inaugurates

Mr. J. ARUMAI RUBAN
Field Coordinator, EDII-TN
Vote of Thanks

15 OCTOBER 2022
SATURDAY
Time: 3:30 pm.

Coordinator: Mr. J. Arumai Ruban
Co-venor: Prof. C. Vethirajan
Registrar i/c: Prof. S. Rajamohan



Honouring the Controller of Examination
Prof. E. Kannapiran




Prof. C. Vethirajan Addressing



Certificate Distribution

Design Thinking Workshop



ALAGAPPA UNIVERSITY
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www.alagappauniversity.ac.in

Alagappa Institute of Skill Development
 Entrepreneurship Innovation and Career Hub & IIC-ALU
 &
**ENTREPRENEURSHIP DEVELOPMENT
 AND INNOVATION INSTITUTE**
 (Government of Tamil Nadu)

*Cordially invite you to the Inaugural Function of
 Two Day Workshop on*

Design Thinking


Venue: Seminar Hall, AISD
Prof. C. VETHIRAJAN
 Director i/c, EIC Hub, Alagappa University
 Welcomes


Prof. G. RAVI
 Vice-Chancellor,
 Alagappa University
 Presides

Mr. R. ARUN KUMAR
 Master Trainer
 Entrepreneurship Development and Innovation Institute, Tamil Nadu
 Inaugurates

Mr. J. ARUMAI RUBAN
 Master Trainer EDII, Tamil Nadu
 Vote of Thanks

Mr. J. Arumai Ruban
Coordinator
Prof. C. Vethirajan
Convener
Prof. S. Rajamohan
Registrar i/c





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 &
**ENTREPRENEURSHIP DEVELOPMENT
 AND INNOVATION INSTITUTE**
 (Government of Tamil Nadu)

*Cordially invite you to the Valedictory Function of
 Two Day Workshop on*

Design Thinking


Venue: Seminar Hall, AISD
Prof. C. VETHIRAJAN
 Director i/c, EIC Hub, Alagappa University
 Welcomes

Prof. S. RAJAMOHAN
 Registrar i/c,
 Alagappa University
 Valedicates

Mr. R. ARUN KUMAR
 Master Trainer
 Entrepreneurship Development and Innovation Institute, Tamil Nadu
 Felicitates

Mr. J. ARUMAI RUBAN
 Master Trainer EDII, Tamil Nadu
 Vote of Thanks

Mr. J. Arumai Ruban
Coordinator
Prof. C. Vethirajan
Convener
Prof. S. Rajamohan
Registrar i/c






A Group Photo with Honourable Vice Chancellor Prof. Dr. G. Ravi



Entrepreneurship Promotional Activities for the Outgoing Students in Alagappa University



ALAGAPPA UNIVERSITY
(A State University Established in 1985)
KARAIKUDI - 630 003, Tamil Nadu, India
www.alagappauniversity.ac.in

**EDII-IEDP ALAGAPPA UNIVERSITY HUB
&
ALAGAPPA INSTITUTE OF SKILL DEVELOPMENT**
in association with
DEPARTMENT OF CORPORATE SECRETARYSHIP
Cordially invite you to the One Day Programme on

**"Entrepreneurship Promotional Activities
for the Outgoing Students"**

— 04:00:00h —
Venue: Conference Hall,
Faculty of Management

**15th NOVEMBER
2022**
— 10:30 a.m. —
Time: 10:30 a.m.

Prof. C. Vethirajan
Professor & Head, Department of Corporate Secretaryship
Director I/c, AISD, Alagappa University
Welcomes

Prof. G. Ravi
Vice-Chancellor
Alagappa University
Presides

Thiru. S. Subburaj, IES,
Deputy Director,
Minister of Labour & Employment
Government of India
Inaugurates

Mr. T. Kannan
General Manager, District Industrial Centre
Sivagangal District
Felicitates

Mr. J. Arumai Ruban
Field Coordinator & Master Trainer – EDII Tamil Nadu
Vote of Thanks

Mr. J. Arumai Ruban Programme Coordinator
Prof. C. Vethirajan Convener
Prof. S. Rajamohan Registrar I/c



Dignitaries on the Dias with Honourable Vice
Chancellor Prof. Dr. G. Ravi



Prof. C. Vethirajan Addressing

SIDP Boot Camp for School Students



Dignitaries on the Dias with Honourable Former Vice Chancellor Prof. S. Subbiah Ravi



A Group Photo with Honourable Former Vice Chancellor Prof. S. Subbiah Ravi, ALU



Certificate Distributed by Honourable Former Vice Chancellor Prof. S. Subbiah Ravi

Spoke Review Meet



Prof. C. Vethirajan Evaluating the Performance of Spoke Colleges




Best Spoke College Shield given by Honourable Vice Chancellor Prof. Dr. G. Ravi



Best E&I Cell Coordinator Shield given by Honourable Vice Chancellor Prof. Dr. G. Ravi

TNSI 2022 Ideation Camp


ALAGAPPA UNIVERSITY
(Accredited with A+ Grade by NAAC (CGPA: 3.44) in the 3rd Cycle,
Graded as Category I University and Granted Autonomy by MHRD - UGC,
2022 - NIRF - 2B, 2022 - THE - ASIA - 122, THE - World Young Universities - 138,
2023 - QS South Asia - 51, Qs Asia - 251-260)
KARAIKUDI - 630 003, Tamil Nadu, India

EDII-IEDP ALAGAPPA UNIVERSITY HUB
&
**Entrepreneurship Development
and Innovation Institute**
(Government of Tamil Nadu)

Cordially invite you to the Two Day Programme on
“Ideation Camp”

Tamil Nadu Student Innovators Phase-II (TNSI-2022)
Venue: L.C.T.L Palaniappa Chettiar Memorial Auditorium

Prof. C. Vethirajan
Director i/c - AISD, Alagappa University
Welcomes

Prof. G. Ravi
Vice-Chancellor
Alagappa University
Presides & Inaugurates

Dr. T. Karthik
Programs Director, Maxelerator Foundation, Madurai
Keynote Address

Mr. J. Emmanuel Robin
Programs Director, Maxelerator Foundation, Madurai
Thematic Address

Mr. J. Arumai Ruban
Field Coordinator & Master Trainer – EDII Tamil Nadu
Vote of Thanks

**21 & 22
FEBRUARY
2023**

Mr. J. Arumai Ruban Programme Coordinator
Prof. C. Vethirajan Convenor
Prof. S. Rajamohan Registrar i/c



Prof. C. Vethirajan Addressing



A Group Photo with Prof. C. Vethirajan, Director, AISD

IPR Workshop

Funded By



EDII - IEDP ALAGAPPA UNIVERSITY HUB
&
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Government of Tamil Nadu

Jointly Organize the

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Resource Person
Mr. R. Arun Kumar
Master Trainer
EDII – Government of Tamil Nadu
Certified Patent Agent
Government of India

Entrepreneurship
DEVELOPMENT AND INNOVATION INSTITUTE
GOVERNMENT OF TAMIL NADU

IEDP

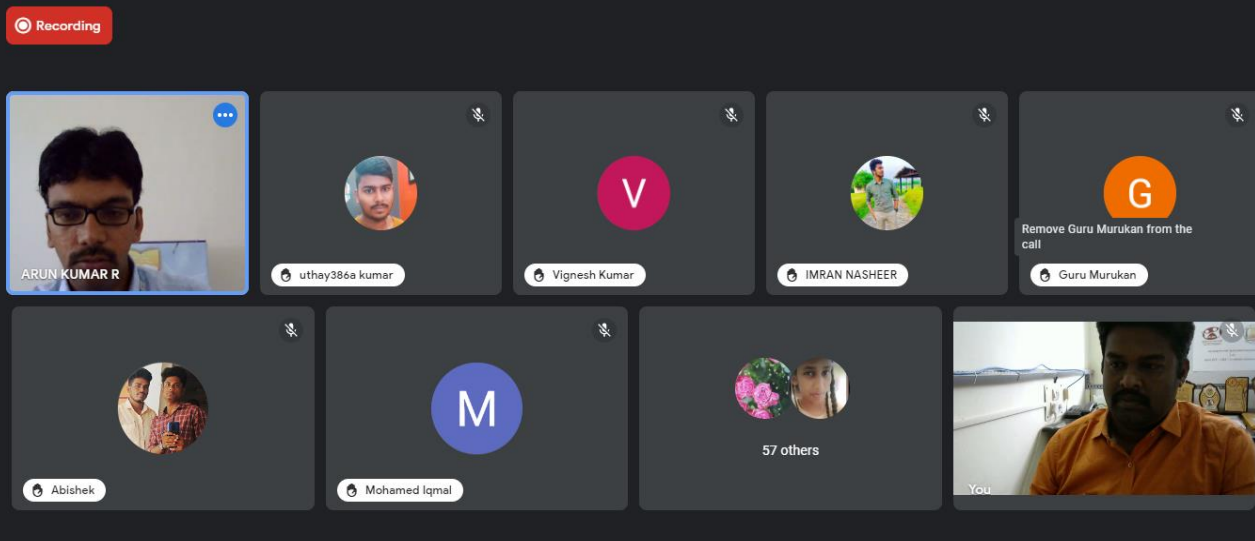
Date : 16.03.2023 & 17.03.2023 Time : 10.30 AM Platform: Virtual Mode

Organizer
Prof. C. Vethirajan
Director i/c & Hub Coordinator
EIC & IEDP Hub Alagappa University,

Programme Coordinator
Mr. J. Arumai Ruban,
Field Coordinator & Master Trainer, EDII-TN
EDII-IEDP Hub Alagappa University

நிதி உதவி : தமிழ் நாடு தொழில் முனைவோர் மேம்பாடு மற்றும் புத்தாக்க நிறுவனம்

Recording



ARUN KUMAR R

uthay386a kumar

Vignesh Kumar

IMRAN NASHEER

Guru Murukan

Remove Guru Murukan from the call

Abishek

Mohamed Iqmal

57 others

You

12:50 PM | INTELLECTUAL PROPERTY RIGHTS (IPR)

33°C Mostly sunny

ENG IN 12:50 PM 2023-03-16

Newspaper Glimpses

விநாயா கிரி சூல்கள் காரைக்குடி நியூஸ்

31-Jan-2023 செவ்வாய்க்கிழமை E-PAPER 6 Pages

காரைக்குடி ஸ்ரீ ராஜராஜன் பொறியியல் கல்லூரியில் 3 அமைப்புகள் சார்பில் 3 மாவட்டங்கள் பாங்குவற்ற 2 நாட்கள் 'யூட்கேம்ப'



காரைக்குடி, 31-1-2023: காரைக்குடி ஸ்ரீ ராஜராஜன் பொறியியல் கல்லூரியில் 3 அமைப்புகள் சார்பில் 3 மாவட்டங்கள் பாங்குவற்ற 2 நாட்கள் 'யூட்கேம்ப' நடைபெற்றது. காரைக்குடி, மதுரை, சிவகங்கை மாவட்டங்களில் உள்ள கல்லூரிகளில் நடைபெற்ற இந்த நிகழ்ச்சியில் காரைக்குடி ஸ்ரீ ராஜராஜன் பொறியியல் கல்லூரியின் மாணவர்களுக்கு தொழில்முனைவோர் பயிற்சியளிக்க நியுதவி வழங்கும் நடவடிக்கை நடைபெற்றது. காரைக்குடி, மதுரை, சிவகங்கை மாவட்டங்களில் உள்ள கல்லூரிகளில் நடைபெற்ற இந்த நிகழ்ச்சியில் காரைக்குடி ஸ்ரீ ராஜராஜன் பொறியியல் கல்லூரியின் மாணவர்களுக்கு தொழில்முனைவோர் பயிற்சியளிக்க நியுதவி வழங்கும் நடவடிக்கை நடைபெற்றது.

செய்தி மற்றும் விளம்பர தொடர்புக்கு : 9790597137

தொழில்முனைவோர் பயிற்சிக்கு நியுதவி



அழகப்பா பல்கலைக்கழகத்தில் செவ்வாய்க்கிழமை நடைபெற்ற நிகழ்ச்சியில் தொழில்முனைவோர் பயிற்சித் திட்டத்தில் முதலிடம் பெற்ற கீழ்க்கண்ட தரவரிசை அடங்கலாக மகளிர் கல்லூரி ஒருங்கிணைப்பாளியும் கேட்டயம் வழங்கிய துணைவேந்தர் க. ரவி.

காரைக்குடி, பிப். 15: காரைக்குடி அழகப்பா பல்கலைக்கழகத்தில், கல்லூரிகளில் மாணவர்களுக்கு தொழில்முனைவோர் பயிற்சியளிக்க நியுதவி வழங்கும் நடவடிக்கை நடைபெற்றது. காரைக்குடி, மதுரை, சிவகங்கை மாவட்டங்களில் உள்ள கல்லூரிகளில் நடைபெற்ற இந்த நிகழ்ச்சியில் காரைக்குடி ஸ்ரீ ராஜராஜன் பொறியியல் கல்லூரியின் மாணவர்களுக்கு தொழில்முனைவோர் பயிற்சியளிக்க நியுதவி வழங்கும் நடவடிக்கை நடைபெற்றது.

இதில் துணைவேந்தர் க. ரவி, கல்லூரிகளின் தொழில்முனைவோர் பிரிவு ஒருங்கிணைப்பாளிகளிடம் காசோலைகளை வழங்கினார். மேலும், சிறப்பாகச் செயல்பட்ட 5 கல்லூரிகளுக்கு நினைவுப் பரிசும், சிறப்பாகச் செயல்பட்ட 10 கல்லூரிகளின் தொழில்முனைவோர் பிரிவின் ஒருங்கிணைப்பாளர்களுக்கு கேட்டயம் வழங்கினார்.

நிகழ்ச்சியில் பல்கலைக்கழகப் பதிவாளர் (பொறுப்பு) சுபாஜமோகன், பல்கலைக்கழக தொழில் முனைவோர் அமைப்பின் ஒருங்கிணைப்பாளர் செ.வேதராஜன், தமிழ்நாடு தொழில் முனைவோர் மேம்பாடு புத்தகக் நிறுவனத்தின் கன ஒருங்கிணைப்பாளர் ஜோர் அமுதம் மூகன் ஆகியோர் கலந்து கொண்டனர்.

தினகரன் 3/4

தொழில் முனைவோர் பயிற்சி வழங்கிய கல்லூரிகளுக்கு விருது வழங்கும் விழா



காரைக்குடி, பிப். 15: காரைக்குடி அழகப்பா பல்கலைக்கழக தொழில் முனைவோர் மேம்பாட்டு அமைப்பின் சார்பில் தொழில் முனைவு மற்றும் புத்தகக் பயிற்சிகளை சிறப்பாக வழங்கிய கல்லூரிகளுக்கு விருது வழங்கும் விழா நடந்தது. தொழில் முனைவோர் அமைப்பின் சார்பில் தொழில் முனைவு மற்றும் புத்தகக் பயிற்சிகளை சிறப்பாக வழங்கிய கல்லூரிகளுக்கு விருது வழங்கும் விழா நடந்தது.

காரைக்குடி அழகப்பா பல்கலைக்கழகத்தில் நடைபெற்ற தொழில் முனைவோர் மேம்பாட்டு அமைப்பின் சார்பில் தொழில் முனைவு மற்றும் புத்தகக் பயிற்சிகளை சிறப்பாக வழங்கிய கல்லூரிகளுக்கு விருது வழங்கும் விழா நடந்தது.

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விநாயா கிரி சூல்கள் காரைக்குடி நியூஸ்

11-Mar-2023 சனிக்கிழமை E-PAPER 13 Pages

பள்ளத்தார் சீதாலட்சுமி ஆச்சி மகளிர் கல்லூரியில் 'தொழில் முனைவு ஊக்குவிப்பு' கருத்தரங்கம்



காரைக்குடி, மார்ச் 11: பள்ளத்தார் சீதாலட்சுமி ஆச்சி மகளிர் கல்லூரியில் தொழில் முனைவு ஊக்குவிப்பு கருத்தரங்கம் நடைபெற்றது. காரைக்குடி அழகப்பா பல்கலைக்கழக தொழில் முனைவோர் மேம்பாட்டு அமைப்பின் சார்பில் தொழில் முனைவு மற்றும் புத்தகக் பயிற்சிகளை சிறப்பாக வழங்கிய கல்லூரிகளுக்கு விருது வழங்கும் விழா நடந்தது.

காரைக்குடி அழகப்பா பல்கலைக்கழக தொழில் முனைவோர் மேம்பாட்டு அமைப்பின் சார்பில் தொழில் முனைவு மற்றும் புத்தகக் பயிற்சிகளை சிறப்பாக வழங்கிய கல்லூரிகளுக்கு விருது வழங்கும் விழா நடந்தது.

My Story - A Motivational Session by Successful Innovators



ALAGAPPA UNIVERSITY

(A State University Established in 1985)
KARAIKUDI - 630 003, Tamil Nadu, India
www.alagappauniversity.ac.in

**ALAGAPPA INSTITUTE OF SKILL DEVELOPMENT
&
ENTREPRENEURSHIP, INNOVATION AND CAREER HUB**
in association with

**INSTITUTION'S INNOVATION COUNCIL -
ALAGAPPA UNIVERSITY (IIC- ALU)**

Cordially invite you to the One Day Programme on

**"MY STORY- MOTIVATIONAL SESSION
BY SUCCESSFUL INNOVATORS"**

Venue: Seminar Hall, Alagappa Institute of Skill Development

Programme Schedule

Session 1: My Story

Mr. K. Sankaralingam

Founder & CEO, Greenscart, Madurai
TNSI Winner of EDII-Tamil Nadu

Session 2: My Story

Ms. N. Anjali

New Trends
Bhurma Colony, Karaikudi

Prof. S. Rajamohan

Registrar i/c
Alagappa University
Valedictory Address



Dr. N.M. Prabhu

Assistant Professor, Dept. of Animal Health and Management,
Alagappa University


Vote of Thanks

Dr. P. S. Nagarajan
Dr. N. M. Prabhu
Deputy Coordinators

Prof. C. Vethirajan
Coordinator - Convenor

Prof. S. Rajamohan
Registrar i/c

Two Day Workshop on Problem Solving and Ideation



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Cordially invite you to the Two Day Programme on
**SESSION ON PROBLEM SOLVING AND
 IDEATION WORKSHOP**

Venue: Seminar Hall, Alagappa Institute of Skill Development

Prof. C. Vethirajan
 Director I/c - AISD, Alagappa University
Welcomes
Prof. G. Ravi
 Vice-Chancellor
 Alagappa University
Presides
Dr. R. Swaminathan
 Syndicate Member
 Alagappa University
Inaugurates
Mr. SP. Nagappan
 Software Training Academic Head,
 WBC Software Lab, Karaikudi
Keynote Address
Mr. SM. Palaniappan
 Career Guidance Manager
 WBC Software Lab, Karaikudi
Special Address
Dr. K. Govindarajan
 Deputy Coordinator, Placement Cell
 Alagappa University
Vote of Thanks
Prof. C. Vethirajan
 Coordinator - Convenor
Prof. S. Rajamohan
 Registrar I/c

25th & 26th
 2022
 NOVEMBER
 Time: 10.30 a.m.

Dr. K. Govindarajan
 Dr. V. Sugumar
 Deputy Coordinators



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Cordially invite you to the Two Day Programme on
**SESSION ON PROBLEM SOLVING AND
 IDEATION WORKSHOP**

Venue: Seminar Hall, Alagappa Institute of Skill Development

PROGRAMME SCHEDULE

25.11.22 Day 1 - Session 1
Mr. S. Nagappan
 Software Training Academic Head,
 WBC Software Lab, Karaikudi
 25.11.22 Day 1 - Session 2
Mr. SM. Palaniappan
 Career Guidance Manager
 WBC Software Lab, Karaikudi
 26.11.22 - Day 2
Mr. R. Arun Kumar
 Technical Executive, AIIRF-EDII
 Annamalai University, Chidambaram
Prof. S. Rajamohan
 Registrar I/c
 Alagappa University
Valedictory Address
Prof. K. Sankaranarayanan
 Professor and Head, Department of Physics
 Syndicate Member, Alagappa University
Felicitation Address
Dr. V. Sugumar
 Assistant Professor,
 Dept. of Oceanography
 Alagappa University
Vote of Thanks
Prof. C. Vethirajan
 Coordinator - Convenor
Prof. S. Rajamohan
 Registrar I/c

26th
 2022
 NOVEMBER
 Time: 4.30 p.m.

Dr. K. Govindarajan
 Dr. V. Sugumar
 Deputy Coordinators



Prof. C. Vethirajan Addressing



IIC Programme with Honourable Vice Chancellor
Prof. Dr. G. Ravi

Internal Hackathon and reward best ideas for YUKTI - NIR -2022





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**INSTITUTION'S INNOVATION COUNCIL (IIC)
 &
 HIGHER EDUCATION INNOVATION CELL (HEIC)
 ALAGAPPA UNIVERSITY**




INTERNAL HACKATHON AND REWARD BEST IDEAS OF YUKTI-NIR-2022

CERTIFICATE OF APPRECIATION

Presented to
Dr. C. VETHIRAJAN,
 Professor and Head, Department of Corporate Secretaryship,
 Alagappa University, Karaikudi,
for successfully imparting Convener in
INTERNAL HACKATHON AND REWARD BEST IDEAS OF
YUKTI-NIR-2022 organised by Institutions Innovation Council (IIC) &
 Higher Education Innovation Cell (HEIC) Alagappa University,
 Karaikudi, held on 30th November, 2022

Dr. S.RAJAMOHAN
 Registrar /c

Entrepreneurship, Skill Attitude and Behavior Development

ALAGAPPA UNIVERSITY
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Karaikudi – 630 003, Tamil Nadu, India

**Institution's Innovation Council,
Alagappa Institute of Skill Development**
Organizes
Workshop on
**Entrepreneurship Skill, Attitude and
Behaviour Development**
(Quarter - II, IIC 5.0, Under RUSA 2.0 Phase II Scheme)

**14th
FEBRUARY
2023** Venue: Convocation Seminar Hall, Alagappa University Time: 10.30 a.m.

Prof. C. Vethirajan
Director I/c, AISD & Coordinator
Welcomes

Prof. Dr. G. Ravi, D.Sc.,
Vice-Chancellor,
Alagappa University
Presides & Inaugurates

Mr. C. Ramasamy Desai
Project Director
CR Business Solutions, Trichy
Delivers Keynote Address

Mr. R. K. Raajesh Kannan M.E., (Welding Tech) Ph.D (NITT)
Certified Welding Inspector CSWI
P 3.1 & CWI Welding Consultant, Ashok Leyland FBVS
Proprietor, R K Engineering Enterprises, Trichy,
Special Address

Dr. V. A. Anand
Assistant Professor, DoLM & Deputy Coordinator
Thanks

Dr. V. A. Anand Organizing Secretary **Prof. C. Vethirajan** Convener **Prof. S. Rajamohan** Registrar




Honoring the Vice Chancellor
Prof. Dr. G. Ravi








Prof. C. Vethirajan Addressing

One Day Workshop on Internal Hackathon and reward best ideas for YUKTI - NIR -2023



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ENTREPRENEURSHIP, INNOVATION AND CAREER HUB
in association with
**INSTITUTION'S INNOVATION COUNCIL -
ALAGAPPA UNIVERSITY (IIC - ALU)**
Cordially invite you to the Inauguration of
**ONE DAY WORKSHOP ON INTERNAL HACKATHON
AND REWARD BEST IDEAS OF YUKTI-NIR-2023**
*On Friday 24th February, 2023 at 10.00 a.m. in the
Multipurpose Computer Laboratory, Science Campus*

Dr. C.VETHIRAJAN
Director i/c AISD, Convener IIC - ALU
Welcomes

Prof. G.RAVI
Vice- Chancellor
Inaugurates & Presides

Dr. V.PALANISAMY
Member of Syndicate
Felicitates

Mr. R.RAJESH
DGM-Seeds, T.Stanes and Company, Trichy
Delivers Special Address

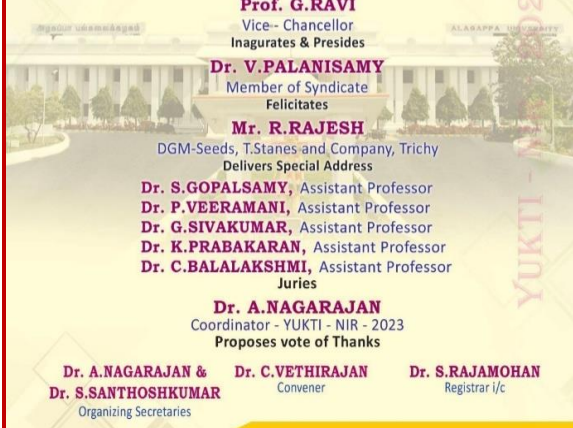
Dr. S.GOPALSAMY, Assistant Professor
Dr. P.VEERAMANI, Assistant Professor
Dr. G.SIVAKUMAR, Assistant Professor
Dr. K.PRABAKARAN, Assistant Professor
Dr. C.BALALAKSHMI, Assistant Professor
Juries

Dr. A.NAGARAJAN
Coordinator - YUKTI - NIR - 2023
Proposes vote of Thanks

**Dr. A.NAGARAJAN &
Dr. S.SANTHOSHKUMAR**
Organizing Secretaries

Dr. C.VETHIRAJAN
Convener

Dr. S.RAJAMOCHAN
Registrar i/c



YUKTI - NIR - 2023



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ENTREPRENEURSHIP, INNOVATION AND CAREER HUB
in association with
**INSTITUTION'S INNOVATION COUNCIL -
ALAGAPPA UNIVERSITY (IIC - ALU)**
Cordially invite you to the Valediction of
**ONE DAY WORKSHOP ON INTERNAL HACKATHON
AND REWARD BEST IDEAS OF YUKTI-NIR-2023**
*On Friday 24th February, 2023 at 4.30 p.m. in the
Multipurpose Computer Laboratory, Science Campus*

Dr. A.NAGARAJAN
Coordinator - YUKTI - NIR - 2023
Welcomes

Dr. S.RAJAMOCHAN
Registrar i/c
Vice-President, IIC-ALU
Presides & Delivers Valedictory Address

Dr. T.MEYYAPPAN
Professor & Head,
Department of Computer Science
Delivers Special Address

Dr. S.SANTHOSH KUMAR
Assistant Professor
Proposes Vote of Thanks

**Dr. A.NAGARAJAN &
Dr. S.SANTHOSHKUMAR**
Organizing Secretaries

Dr. C.VETHIRAJAN
Convener

Dr. S.RAJAMOCHAN
Registrar i/c



YUKTI - NIR - 2023

Facon Fest 2023

ALAGAPPA UNIVERSITY
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 Graded as Category I University and Granted Autonomy by MHRD, UGC,
 2022 - NMF: 78, 2022 - TNP, ASIA: 199, TNP, World Young Universities - 138,
 2023 - QS South Asia: 51, Qi Asia: 251 - 260)
 KARAIKUDI - 630 003, Tamil Nadu, India

**ALAGAPPA INSTITUTE OF SKILL DEVELOPMENT
 FASHION TECHNOLOGY**
Cordially invites you to the

Venue: L.C.T.L. Palaniappa Chettiar Memorial Auditorium

Prof. C. Vethirajan
 Director i/c - AISD,
 Alagappa University
 Welcomes

Prof. G. Ravi
 Vice - Chancellor
 Alagappa University
 Presides

Mr. S. Syed Bazil
 Managing Director, Params Textiles, Karaikudi
 Inaugurates

Mr. P. Lakshmanakanth
 Principal,
 Institute of Fashion Technology Kerala (IFTK),
 Kerala
 Special Address

Prof. J. Sujathamalini
 Dean, Faculty of Education
 Alagappa University
 Felicitates

Dr. G. Mahesh
 Assistant Professor - AISD
 Alagappa University
 Vote of Thanks

Dr. G. Mahesh
 Organizing Secretary

Prof. C. Vethirajan
 Convener

Prof. S. Rajamohan
 Registrar i/c

17th
 MARCH
 2023
 10:00.00 p.m





ALAGAPPA UNIVERISTY
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Graded as Category – I University and Granted Autonomy by MHRD-UGC)
KARAIKUDI – 630 003, TAMIL NADU, INDIA



Internal Hackathon Report for Smart India Hackathon-2022

1. About the Event:

Internal Hackathon for Smart India Hackathon-2020 has been organized at Alagappa University, Karaikudi, Tamil Nadu on 12th April 2022. Total 09 teams are participated in the internal hackathon. There were 08 teams registered for software category and 01 team in hardware category. All the student participants are motivated and worked hard to develop their prototype model. Set of eminent panel of juries were present there for mentoring and evaluating the teams. Internal Hackathon were carried out by two phases mentoring phase and implementation phase. Judgments has been conducted by the parameters like novelty, details of research work, practicability, feasibility, impact on society and future implantation and team work etc.

Event Inaugurated by the Members of the Vice-Chancellor Officiating Committee, Alagappa University Dr.R.Swaminathan, Member Syndicate and Prof.S.Karuppusamy, Member Syndicate, Professor and Head, Department of Energy Science, Alagappa University, Karaikudi. Dr.P.Eswaran, SPOC – SIH – 2022 welcomed the gathering subsequently Mr.Rm.Palaniappan, CEO, WBC Software Lab has presented the Special address, Dr.R.Rameshbabu, Sr. System Engineer proposed vote of thanks, Jury members and Team Mentors, internal faculty members students were actively participated.

2. Photos of the Event organized: Inauguration Photos:



2.1. Welcome Address by SPOC:



2.2 Special Talk by Guest:



2.3 Vice- Chancellor Officiating Committee Members Visit





3. Pictures of all participating teams:
Team No. and Name: 1 - Code Terminators



Team No. and Name: 2 – Cyber Techies



Team No. and Name: 3 – Skill Coders



Team No. and Name: 4 – Cool Tech



Team No. and Name: 5 – Data Genie



Team No. and Name: 6 – Green Technology



Team No. and Name: 7 – Data Master



Team No. and Name: 8 – Electro Sport



Team No. and Name: 9 – Tech Master



Valedictory Function

In the valedictory function our Respected Registrar i/c Prof.C.Sekar participated and delivered valedictory address. He motivated the student participants with some latest technology developments. Dr.G.IIankumaran, Director i/c, Alagappa Institute of Skill Development Centre, Alagappa University convener of this event has delivered felicitation address and briefed the overall SIH process clearly. Dr.G.Shanthi, System Programmer, one of the jury members have delivered the vote of thanks and function completed successfully



4. Judging Process:

As per the instruction given by the SIH- 2022, we have arranged eminent jury members from our own university. A panel of judges is established for each of the categories of given problem statement to ensure the entries can be judged consistently and fairly. Judges meet with each other face-to-face and decide upon the winners of each category, covering the merits of each entry in terms of its relation to the category brief. Entries are scored by consensus against judging criteria to achieve a verdict.





5. Jury Panel Photo and Relevant details



Details of Jury Panel

1. Dr.A.Padmapriya,
Professor,
Department of Computer Science
Alagappa University, Karaikudi-63000, Tamil Nadu.
Mobile No.: 9443747211, Mail id: padmapriyaa@alagappauniversity.ac.in
2. Dr.R.Rameshbabu,
Sr. System Engineer
Department of Computational Logistics
Alagappa University, Karaikudi – 630003, Tamil Nadu.
Mobile No.: 9443572535, Mail id: rameshbabu@alagappauniversity.ac.in
3. Dr.G.Shanthi,
System Programmer
Department of Computer Applications
Alagappa University, Karaikudi-63000, Tamil Nadu.
Mobile No.: 9750306325 Mail id.: shanthig@alagappauniversity.ac.in

6. Nominated Top Teams

All the participated 9 teams are nominated as per the jury member's suggestion.

7. Judges Photos and Details



<https://alagappauniversity.ac.in/modules/Academics/uploads/faculty/files/Dr.A.Padmapriya.pdf>



[https://alagappauniversity.ac.in/modules/Academics/uploads/faculty/files/1490264640_CC_Dr_R_Rameshbabu\(23-03-2017\).pdf](https://alagappauniversity.ac.in/modules/Academics/uploads/faculty/files/1490264640_CC_Dr_R_Rameshbabu(23-03-2017).pdf)



https://alagappauniversity.ac.in/modules/Academics/uploads/faculty/files/6.CA_%20G.%20shanthi.pdf

8. Total Teams and Students Participated





10. Twitter/FB/LinkedIn link for the event organized and promoted on your social media

https://twitter.com/iic_alu/status/151352424444983297?t+RGYFLshyuFGFkoeZLet70A&s=19

<https://www.instagram.com/p/CcNrN3Jptnd/?igshid+MDJmNzVKMjY=>

<https://www.facebook.com/108541334859323/posts/173801085000014=>

Details of SPOC – SIH -2022

Dr.P.Eswaran, M.Sc., M.Tech., Ph.D.,

Assistant Professor

(JRF & SRF Awardee, UGC, Govt. of India, New Delhi)

Single Point of Contact – SIH - 2022

Department of Computer Applications

Alagappa University

Karaikudi – 630003, Tamil Nadu.

Email: eswaran@alagappauniversity.ac.in

Mobile No.: 9865022233

Our Honourable Minister, Mr.T.M. Anbarasan Ministry of MSME, Government of Tamil Nadu has issued Rs.1 L cheque to our Hub (EDII IEDP Alagappa University) Students for the winners of Tamil Nadu Student Innovator Hackathon (TNSI 2022)

Event Date: (1.11.2023)



Start-Up EIR Projects

ALAGAPPA UNIVERSITY

Karaikudi, Tamil Nadu

Alagappa University is supported by RUSA Directorate, Tamil Nadu for undertaking novel and innovative research and development activities. The University various innovations in research activities through Entrepreneur Innovation in Residence Scheme (EIR) to development of prototypes, products, start-ups and to promote entrepreneur ecosystems within the campus. In this regard, University has supported 67 research projects under RUSA EIR Scheme in the fields of Science and Humanities. The total budget of Rs. 3.5 crores are allocated by the RUSA directorate for this purpose. These projects lead development of novel and innovative products/prototypes/processes and schemes and are displayed in the Science Campus. The innovative includes nano fertilizer, fish products, waste water treatment, solar cells, biosensors for medical, environmental and agricultural (pesticides) applications. Nano materials products for anti-aging and wound healing applications. These projects are under taken to develop start-ups and spin-off companies through University Incubation Centre.

List of Pre-Incubation – EIR - Students

Sl. No	Name of the Department	Principal Investigator	Co P.I.	Project Title	Budget
1.	Animal Health and Management	Dr.N.M.Prabhu Assistant Professor	G.Sathiyaraj Ph.D., Scholar (Part Time) K.Sannasi Manikandan M.Phil Student	Finfish species specific biofloc formulation for aquaculture application	50,000
2.	Animal Health and Management	Dr.N.M.Prabhu Assistant Professor	P.Thirunageswaran Research Scholar	Formulation of seaweed based Instant soup mixture for human consumption.	50,000
3.	Animal Health and Management	Dr.B.Vaseeharan Professor and Head	C.Sandhiya Ph.D., Scholar	Production of plant based nano gel for diabetic wound healing activity	50,000
4.	Microbiology	Prof.A.Arun Professor and Head	K.Keerthiga Student-M. Phil (Pursuing) A.Abubakkar Siddik Ph.d. (pursuing)	Novel proton Exchange Membrane for the 96% overall cost reduction in microbial fuel cell-based bioelectricity generation.	50,000
5.	Microbiology	Prof.A.Arun Professor and Head	Ms.M.Thulasi PG Student	Biodegradable Plastic films from lignin Ligno cellulosic wastes and their biodegradability in soil and water.	50,000
6.	Biotechnology	Dr.S.Gowrishankar Assistant Professor	G.Karthika II Year Student	Natural anticariogenic agents-based mouthwash for improved oral hygiene.	50,000
7.	Biotechnology	Dr.M.Ramesh Professor	Collince Omondi Awere Ph.D. Scholar	Enhanced Squalene and Scopoletin production in hairy root cultures of <i>Evolvulus alsinoides</i> via <i>AGROBACTERIUM RHIZOGENES</i> -MEDIATED GENETIC TRANSFORMATION.	50,000
8.	Biotechnology	Dr.M.Ramesh Professor	K. Pavan Kumar Ph.D., Scholar	Identification of elite accessions of <i>Nilgirianthus ciliates</i> (Nees) for in vitro multiplication and encapsulation for sustainable use.	50,000
9.	Biotechnology	Dr.K.Balamurugan Prof. and Head	Mr.Mounish Research Scholar	Formulation of skin care product using Human Sweat based active principle(s)	50,000
10.	Biotechnology	Dr.K.Balamurugan Prof. and Head	Ms.T.Vinitha Research Scholar	Development of <i>Nigella sativa</i> active constituent based Oral Fast Dissolving Thin strips against neuronal disease.	50,000
11.	Biotechnology	Dr.K.Balamurugan Prof. and Head	KR.Vigneshwaran Student	Development and formulation of skin care night cream comprising gallic acid piperine against UV induced ageing.	50,000

List of Pre-Incubation – EIR - Students

			Ms.Gowripriya Thirumugam Ph.D., Scholar		
12.	Biotechnology	Dr.K.Balamurugan Prof. and Head	Ms.Gowripriya Thirumugam Ph.D., Scholar	Development of Pharmaceutical composition comprising anti-mi RNA antisense oligonucleotides against aging.	50,000
13.	Biotechnology	Dr.K.Balamurugan Prof.and Head	Mr.Malik Basha.S Research Scholar	Production and validation of commercially important natural food colorant from spirulina platensis	50,000
14.	Biotechnology	Dr.Arumugam Veera Ravi Professor	Roshni P.Swasthikka Research Scholar	Construction of novel bacterial-platelet membrane based fusion nanovesicle as a vehicle for carrying therapeutic cargos to target hypoxic tumors.	50,000
15.	Biotechnology	Dr.Arumugam Veera Ravi Professor	Dhanasri Jayamurthy Divya Chandran II Year M.Sc., students	Commercial Cultivation of microalgae and fabrication of novel products-As an entrepreneurial venture and to evaluate its bioactive potential against microbial pathogens.	50,000
16.	Microbiology	Dr.V.Balasubramanian Assistant Professor	G. Sunandha Jeeva Bharathi	Curcumin coated cellulose based wound dressing fabrication using prosopis juliflora (Tamil name seemai karuvel tree) and waste jute fibers (Tamil name sanal)	50,000
17.	Bioelectronics and Biosensors	Dr.V.Dharuman Assistant Professor	S.Aniu Lincy Ph.D., Research Scholar	Device fabrication for onsite detection of staphylococcus aureus.	50,000
18.	Bioelectronics and Biosensors	Dr.V.Dharuman Assistant Professor	Y.Allwin Richard Research Scholar	Development of Portable, IOT and compact device applicable to environmental and water polluting cadmium ion (Cd ²⁺) monitoring.	42,500
19.	Nanoscience and Technology	Dr.N.Suganthi Assistant Professor	N.Prakashkumar Research Scholar	Bio-Waste Derived Hydroxyapatite Nano fertilizer for Smart and sustainable agriculture on Tropical vegetables.	50,000
20.	Nanoscience and Technology	Dr.K.Gurunathan Professor and Head	C.N.Dhivya Mahalakshmi Student	Design and development of Rcoor based carbon Quantum Dots for sensing applications	50,000
21.	Bioelectronics & Biosensor	Dr.C.Sekar Professor and Head	Ravi Maddula Research Scholar	Handy Gadget to Detect leaf Nitrogen and Rationalize Fertilizer Use (Agro-n-sense)	50,000
22.	Bioelectronics & Biosensor	Dr.C.Sekar Professor and Head	S.B.Mayil vealan Research Scholar	Construction of Shock tube for improvement of material properties	50,000
23.	Nanoscience and Technology	Dr.N.Suganthi Assistant Professor	M.Arun J.Aishwarya	Multi nutrient Loaded Edible Nano formulations for the prevention of women and Child malnutrition.	50,000

List of Pre-Incubation – EIR - Students

			Final Year Student		
24.	Nanoscience and Technology	Dr.G.Ramalingam Assistant Professor	V.Janana Priya Ph.D., Scholar	MXene Based Nano inks for Perovskite Solar Cell	50,000
25.	Nanoscience and Technology	Dr.G.Ramalingam Assistant Professor	T.Keerthana Ph.D., Scholar	Preparation of Novel Transition metal Carbides and composites for hybrid super capacitor Applications	50,000
26.	Nano Science and Technology	Dr.P.Shakkthivel Professor	Sonali Narayanan PG Student	Novel Mno2-S Mesoporous Hetero nano structure For High Power Density Li-s Battery Development	50,000
27.	Nano Science and Technology	Dr.P.Shakkthivel Piraman Professor	M.Prakash R.Ananthkumar PG Student	Nanostructured cobalt free transition metal oxide (NMA) Based electrode materials designing for high voltage Li-ionbattery.	50,000
28.	Computer Application	Dr.V.Palanisamy Professor &Head	Ms.G.Thenmozhi Ph.D., Research Scholar	Optimization Based Personalized Recommender System for E-commerce Using Machine Learning Techniques.	50,000
29.	Computer Science	Dr.A.Padmapriya Professor	Mrinali Das Ph.D., Research Scholar	Secured Sharing of smart healthcare data over cloud environment.	50,000
30.	Computational Logistics	Dr.R.Rameshbabu Senior System Engineer	Dr.RM.Subbulakshmi Librarian (Temporary basis)	IoT Based Kitchen Automation & Home Monitoring System	50,000
31.	Oceanography & Coastal Studies	Dr. C. Stella Professor & Head	R.Reshma Jefreen D. Harini N. Parameshwaran N. Dharankumar	Recirculating Aquaponics – An integrated fish and plant production system for Urban & Rural settings	50,000
32.	Oceanography & Coastal Studies	Dr. C. Stella Professor & Head	M. Manikandan	Production of degradable bioplastic from seaweed	50,000
Total Amount					16,00,000

Cost effective renewable diabetic sensor for home and personal care

Principal Investigator	Dr. V. Dharuman, Department of Bioelectronics and Biosensors, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	Dr. J. Mathiyarasu, Research Scholar, Department of Bioelectronics and Biosensors, Alagappa University (Science Campus), Karaikudi

Objective

Development of cost effective non-enzymatic glucometer for home and personal care.

Work done

Diabetes, a chronic disease, occurs due to accumulation of excess unutilized glucose in blood vessel, leading to various life-threatening physical impairments and death. The normal range of glucose level in blood approved world health organization (WHO) is 70 – 120 mg/dL. Increased glucose level > 140 mg/dL is diagnosed as diabetes. Recently, several glucometers are available in the market for home monitoring from various companies including one touch, lifestyle, accu check, free style, etc. Here, non-enzymatic glucose has been fabricated using metal oxide-gold nanoparticle for detecting glucose at pH 7.4.

1. Metal oxide – gold nanoparticle composite has been prepared and characterized by physical and chemical characterization techniques.
2. Screen printed carbon electrode is modified with Metal oxide – gold nanoparticle and studied electrochemical detection of glucose.
3. Sensor evaluated in physiological buffer for sensor characteristics.

Project Status: Ongoing

Outcome of the project

Sensor device is integrated with mobile, however, requires more experimental works for further implementation.

Synthesis and development of electrochemical transducer material Calcium-MOF from chicken egg shell for the fabrication of portable, IOT and compact device applicable to environmental and water polluting cadmium ion (Cd²⁺) monitoring

Principal Investigator	Dr. V. Dharuman, Department of Bioelectronics and Biosensors, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	Y. Allwin Richard, Research Scholar, Department of Bioelectronics and Biosensors, Alagappa University (Science Campus), Karaikudi

Objectives

- Chicken egg shell wastes are used for developing the calcium-based metal organic framework (Ca-MOF).
- The synthesized Ca-MOF will be applied for the fabrication of use and throw electrode that can be degraded naturally by without releasing the toxic contaminant (Cd²⁺) to the environment and water supplies.

Summary of the Work

Food waste-being a reservoir of various nutrients can act as a raw material for manufacturing various value-added products. From the egg shell waste, the calcium chloride (CaCl) prepared by hydrothermal synthesized and metal organic frameworks (Ca-MOF) was developed. Finally, the fabricated biodegradable electrode was used for the Cd²⁺ detection in the environmental contamination.

Status: Ongoing

Expected outcome of the project

- ✓ The **waste material** was used to synthesis a **useful sensor material**.
- ✓ This promising approach is used to develop an environment friendly trash to device technology.
- ✓ This will lead the researchers to focus on the fabrication of flexible, cost effective, environment friendly, simple and sensitive sensor technology.

- ✓ The fabricated device will hit the market for its low cost, time consuming and sensitive behaviors towards the poisonous cadmium ion and the proposed work will be published in a reputed international sensor journal.

Device Fabrication for onsite detection of *Staphylococcus aureus*

Principal Investigator	Dr. V. Dharuman, Department of Bioelectronics and Biosensors, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	S. Anu Lincy, Research Scholar, Department of Bioelectronics and Biosensors, Alagappa University (Science Campus), Karaikudi

Objectives

- Direct detection of *Staphylococcus aureus* (*S. aureus*, *Staphylococcus*) for bloodstream infections.
- Electrochemical sensor element will be developed using Vitamin functionalized metal oxide nanoparticles (NPs) with high stability and selectivity
- On site *Staphylococcus* detection device will be developed.

Summary of the Work

Novel methods of sensing and treatment required to elicit potent humoral and cellular immune responses. Here, Streptavidin functionalized α -Fe₂O₃-Au nanoparticles (STV-Mag) loaded cationic carbomate cholesterol is used as a carrier to release antibacterial drug for *Staphylococcus aureus* (*S. aureus*). Pertaining to theranostic applications, efficient antimicrobial activity, and non-stimulated drug release and biotin dependent *S. aureus* growth was studied *in-vivo*. While STV-Mag was tethered on mercaptobenzoic acid (MBA) molecular cushion for label free streptavidin-biotin electrochemical sensing, the STV-Mag-carbomate cholesterol (STV-Mag-cCHOL liposome) vesicle with loaded drug was tethered on MBA for non-stimulant drug release through specific cholesterol-*S. aureus* interaction and confirmed electrochemically. Selectivity was confirmed using other pathogens, *E. coli*, *Proteus* and *Enterococcus* bacterium through antimicrobial studies along with *S. aureus*.

Status: Ongoing

Expected outcome of the project

- ✓ This promising approach is used to develop a device for the detection of *Staphylococcus* contaminated blood or bloodstream infections in the field of medical diagnosis by electrochemically.
- ✓ This will lead the researchers to focus on the targeting vitamin mediated metabolic pathways of *Staphylococcus* to the discovery of point of care testing.
- ✓ The fabricated device will hit the market for its low cost, time consuming and sensitive behaviors towards the *Staphylococcus* sensing.

Secured Sharing of Smart Healthcare Data Over Cloud Environment

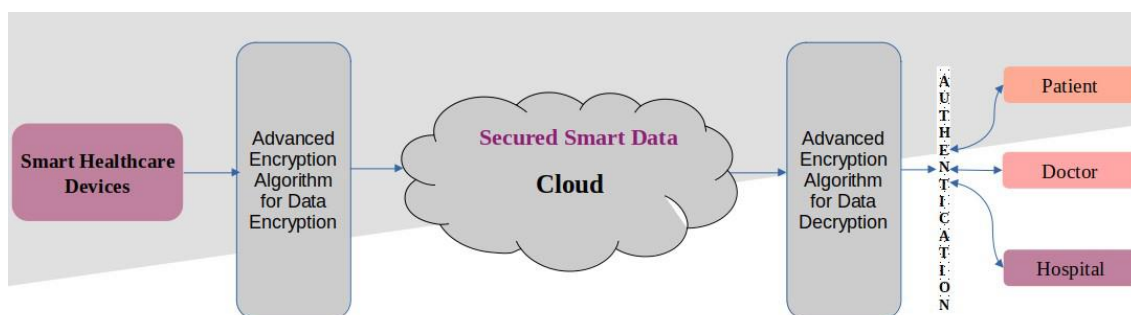
Principal Investigator	Dr. A. Padmapriya, Professor & Head, Department of Computer Science, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	Mrinali Das, Research Scholar, Department of Computer Science, Alagappa University (Science Campus), Karaikudi

Objective

The objective of this project was to propose a new algorithm for storing and sharing IoT health data securely over cloud environment.

Proposed Architecture

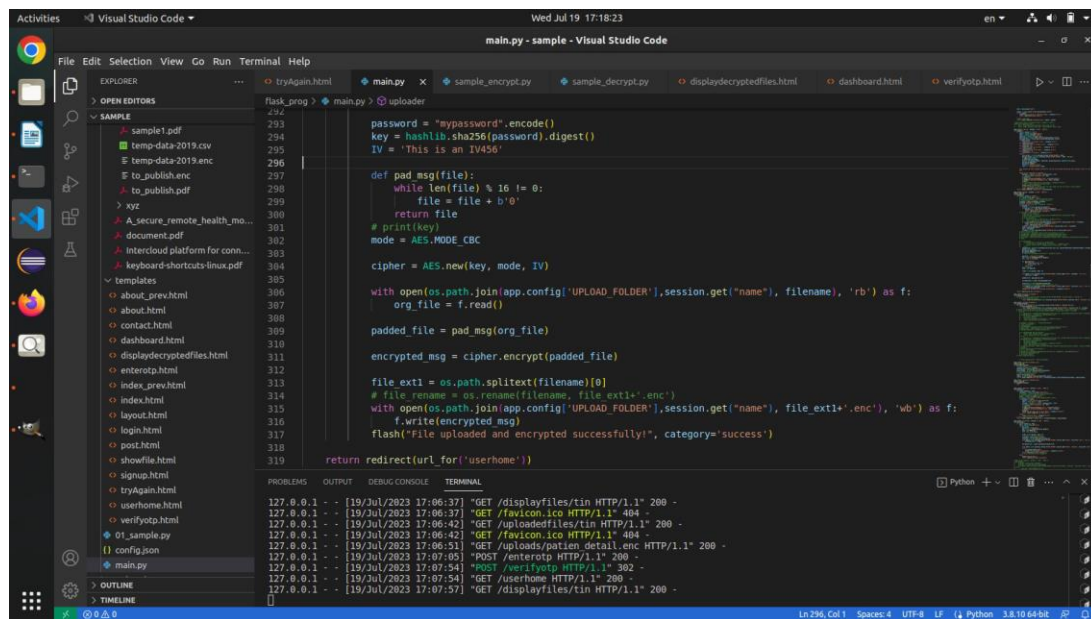
As per the review status, it is clear that Cloud services has not been fully utilized in many applications area. Major advantage of using a Cloud solution for sharing and storing smart health care data will improve its efficiency and security. In IoT applications, Cloud can provide improved services by using its different services. Depending on the user's need, Cloud can present a larger processing power, fastest data processing capabilities etc. which'll enhance efficiency and accuracy in real-time data transmission. Major advantage and objectives are to share resources coherently, to proffer proper security to data, efficient data processing and storing the data in most appropriate location from the point of view of distance and accessibility.



The proposed model established a secure and scalable connection between the patients, doctor and hospitals. Here, the end user i.e. patients will be able to upload their smart health data to the Cloud environment where these data will be encrypted using the Advanced Encryption Algorithm (AES) algorithm and stored there. Before that, the user

needs to Register first. Depending upon the need of these data by their respective users (they might be a hospital or a doctor or a patient), these encrypted data will be shared with them. An authentication mechanism has been also imposed there to verify the user (through login and OTP), then after successful verification, the data will be made available to the user for a particular amount of time. This framework will help people to securely transfer and store their data over the Cloud environment. Here, we've used AES algorithm to encrypt and decrypt the PDF files that contain past health information of patients suffering from chronic disease. So that, the healthcare person can check from the past records to diagnose any disease at an early stage.

Implementation Details



```
password = "mypassword".encode()
key = hashlib.sha256(password).digest()
IV = "This is an IV456"

def pad_msg(file):
    while len(file) % 16 != 0:
        file = file + b'0'
    return file
    # print(key)
    mode = AES.MODE_CBC

cipher = AES.new(key, mode, IV)

with open(os.path.join(app.config['UPLOAD_FOLDER'], session.get("name"), filename), 'rb') as f:
    org_file = f.read()

padded_file = pad_msg(org_file)

encrypted_msg = cipher.encrypt(padded_file)

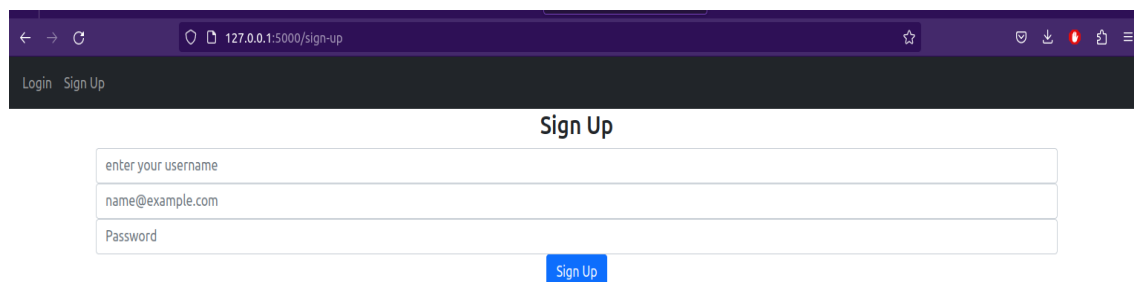
file_ext1 = os.path.splitext(filename)[0]
# file_rename = os.rename(filename, file_ext1+'.enc')
with open(os.path.join(app.config['UPLOAD_FOLDER'], session.get("name"), file_ext1+'.enc'), 'wb') as f:
    f.write(encrypted_msg)

flash("File uploaded and encrypted successfully!", category='success')

return redirect(url_for('userhome'))
```

127.0.0.1 - - [19/Jul/2023 17:06:37] "GET /displayfiles/tin HTTP/1.1" 200 -
127.0.0.1 - - [19/Jul/2023 17:06:37] "GET /favicon.ico HTTP/1.1" 404 -
127.0.0.1 - - [19/Jul/2023 17:06:42] "GET /uploadsfiles/tin HTTP/1.1" 200 -
127.0.0.1 - - [19/Jul/2023 17:06:42] "GET /favicon.ico HTTP/1.1" 404 -
127.0.0.1 - - [19/Jul/2023 17:06:51] "GET /uploads/patient_detail_enc HTTP/1.1" 200 -
127.0.0.1 - - [19/Jul/2023 17:07:05] "POST /enterotp HTTP/1.1" 200 -
127.0.0.1 - - [19/Jul/2023 17:07:54] "POST /verifyotp HTTP/1.1" 302 -
127.0.0.1 - - [19/Jul/2023 17:07:54] "GET /userhome HTTP/1.1" 200 -
127.0.0.1 - - [19/Jul/2023 17:07:57] "GET /displayfiles/tin HTTP/1.1" 200 -

(Fig-2: AES algorithm)



127.0.0.1:5000/sign-up

Login Sign Up

Sign Up

enter your username

name@example.com

Password

Sign Up

(Fig-3: The user needs to register first before using the web services)

Input: Here, we're using PDF files that contain the patient medical history to encrypt.

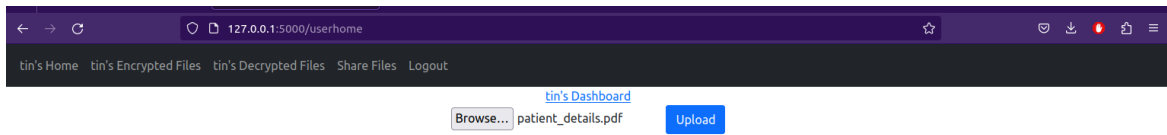
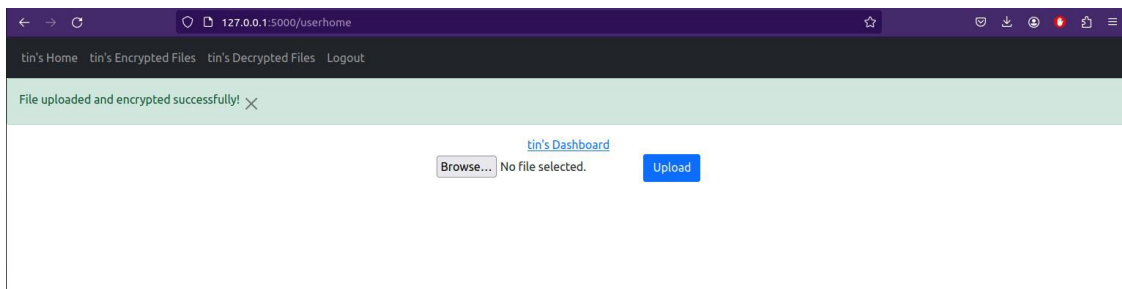
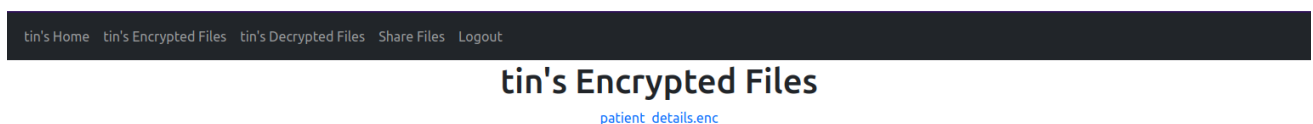


Fig-4: User will upload PDF file to encrypt it)

After successful encryption, if the user want to fetch the file again then the user need to enter their e-mail id that has been used at the time of registration and then the user will get an e-mail regarding the OTP which will then can be used to decrypt the .enc file.

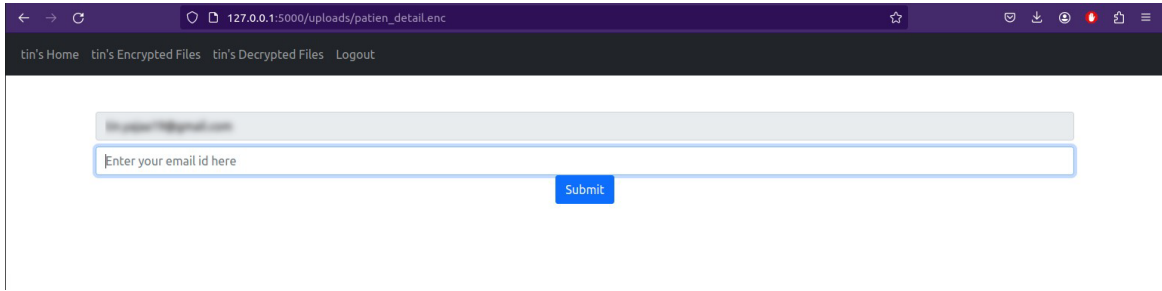


(Fig-5: Message alert showing that the user has successfully uploaded and encrypted the PDF file)



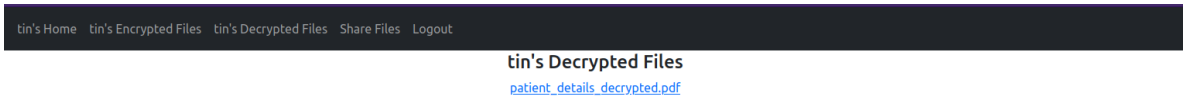
(Fig-6: User can see the uploaded files in. enc form)

Then the user can click on the respective .enc file link which the user needs to decrypt it further. After clicking on the file link, another window will open which will ask the user to enter their email id for further processing. The entered e-mail id will be checked afterwards with the e-mail id that has been entered at the time of Registration. If the e-mail id matched, then only the system will send an e-mail containing the OTP to decrypt the file. Otherwise, it'll show an error.



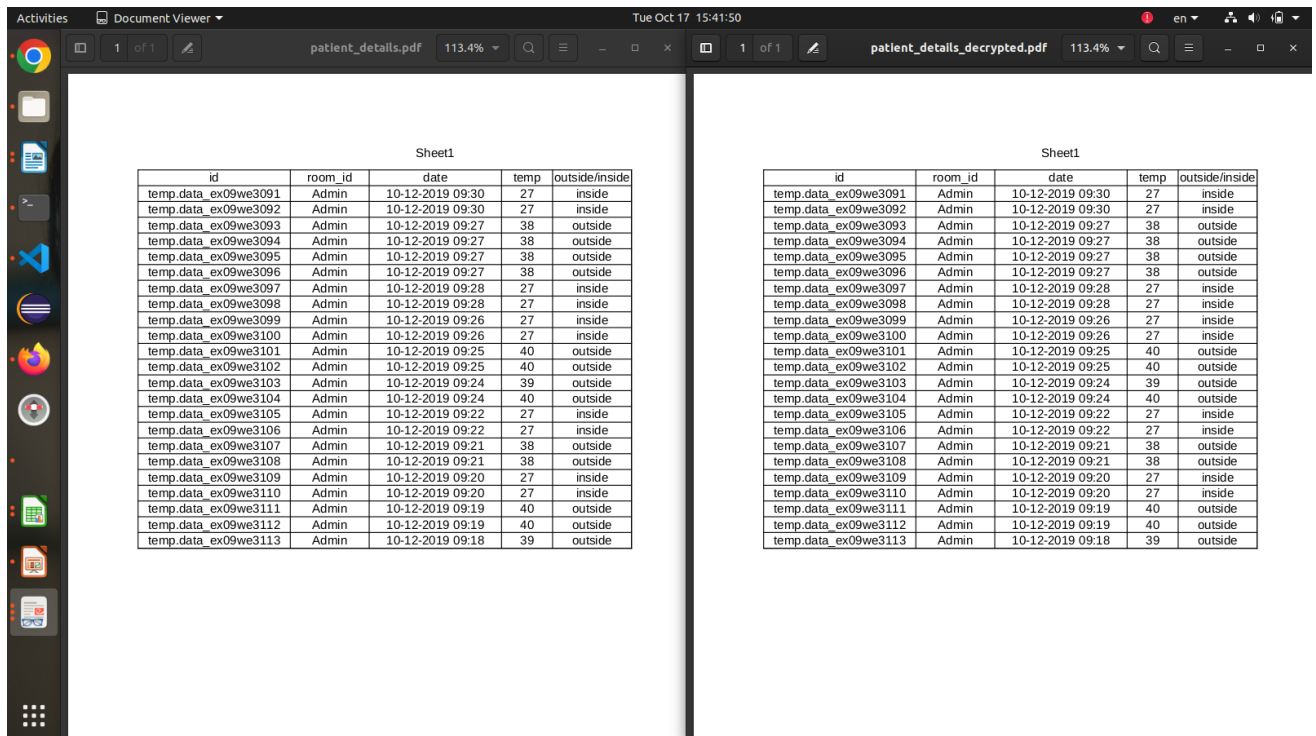
(Fig-7: User need to enter their e-mail id which will be verified with the entered e-mail id of the user during registration time to get the OTP for decrypting the file)

Then the OTP will be sent to the respective user's e-mail id to ensure secure authorization. After entering the OTP, the file will be decrypted and can be seen from the user's dashboard.



(Fig-8: Decrypted file can be seen from the user's dashboard)

After which the user will be able to click on the displayed file link to see and download it.



(Fig-9: Representation of both the files before encryption and after decryption)

In the proposed work, AES algorithm has been implemented for encrypting as well as decrypting the pdf files that contains the past medical history of patients. AES is a block cipher; the size of the key here is 256bits. As compared to DES, triple DES, Blowfish and RSA, AES is supposed to be faster and secure. Because AES is following symmetric encryption mechanism.

Outcome

The proposed framework will not only help the healthcare persons but also the patients to transmit and store their data in a secure manner.

Presented paper in the International Conference on Recent Trends in Computer Science on 31st March 2023, Department of Computer Science, Alagappa University titled “Secured sharing of smart healthcare data over cloud environment”.

DEPARTMENT OF COMPUTER SCIENCE

ALAGAPPA UNIVERSITY
(A State University Established in 1985)
KARAIKUDI - 630 003, Tamil Nadu, India
www.alagappauniversity.ac.in

International Conference on
Recent Trends in Computer Science

CERTIFICATE

This is to certify that *Dr./Mr./Ms.* MRINALI DAS
ALAGAPPA UNIVERSITY has participated / presented
a Paper or Poster entitled SECURED SHARING OF SMART HEALTHCARE DATA
OVER CLOUD ENVIRONMENT
in the *International Conference on Recent Trends in Computer Science* held on 30th &
31st March, 2023 at Seminar Hall, Fourth Floor, Science Campus, Alagappa University,
organised by *Department of Computer Science, Alagappa University, Karaikudi.*

Dr. S. SANTHOSHKUMAR
Organizing Secretary

Prof. A. PADMAPRIYA
Co-Covenor

Sr. Prof. T. MEYAPPAN
Convenor

RTCS 2023

Formulation of skin care product using Human Sweat based active principle(s)

Principal Investigator	Dr. K. Balamurugan, Professor & Head, Department Biotechnology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	B. Mounish, Research Scholar, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi

Objectives

- Formulation of skin cleanser with identified human sweat based active principle (squalene).
- Evaluation of toxicity and quality using *Caenorhabditis elegans*.

Summary of the work done

Extracellular Vesicles play a major role in cell-cell communication as they are released from every type of cell in the body. They carry a cargo which resembles the physiological state of the cell and the cargo is composed of several biomolecules such as proteins, metabolites, nucleic acids etc. We wanted to check if Extracellular Vesicles excreted out in human sweat can be used for therapeutic applications. We isolated Extracellular Vesicles from Human Sweat using Kit based method and with the help of GCMS, we identified the metabolites which are present in these vesicles. The data suggests that there were some bioactive metabolites that are present in the sweat EVs. Further, we formulated a skin care cream with sweat EVs as the bioactive component. At present, we are testing the formulation for its therapeutic potential.

Status: Ongoing

Outcome of the project

Describe in one- or two-lines Processes / prototype / product. A skin care cream with EVs isolated from Human Sweat was formulated and is being tested for its efficacy.

Note. For projects undertaken in EIR Phase I and review held on 31.10.2023.

Please provide photocopy of your product/prototype displayed during the EIR Phase I project evaluation meeting held on 31.10.2023.



Skin care cream formulated using sweat based bio-active principle



No immediate adverse effects were observed

Physiological parameters	
pH	Within the range of 5.5 – 6.5
Texture	Creamy
Colour	White
Stability	Under observation
Effectivity	Under observation

Optimization Based Personalized Recommender System for E-commerce using Machine Learning Techniques

Principal Investigator	Dr. V. Palanisamy, Professor & Head, Department Computer Application, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	G. Thenmozhi, Research Scholar, Department of Computer Application, Alagappa University (Science Campus), Karaikudi

Objective of the Project

- To create Machine Learning (ML) model to recommend relevant movies to the users based on tags and user interests. In addition to the ML Model prediction, we also provide the movie recommendation for all new users.
- To recommend appropriate movies to the selected movie based on the predicted similarity scores using Cosine Similarity.

Scope of the Project

1. Work on several numbers of data:

The number of choices for anything on internet is very high and it's tedious to refine most wanted data by self while searching. The scope of this proposal system includes working within numerous data, with ease.

2. Saving of time:

Many people have problem selecting the alternative item of movie due to lack of time and due to search issues. The system helps in saving lots of time.

3. Relief from processor problem:

Mobile phone and limited processing power computers can't handle recommender system due to its extremely large dataset. The solution opted for this can be use of web services. The proposed system uses web services, thus makes process simpler.

Description

- It is a Web Application for movie recommendation system using Python and Streamlit.
- An image carousel is used to make a website more interactive by enhancing the user experience.
- If one movie is selected from dropdown menu, then the proposed system will recommend top five similar movies based on the title which is selected.
- The recommendation of the movie has done by calculating the cosine similarity among the movies.

Phases

Server-Side End and Front-End	
Data Collection	TMBD movie dataset is collected from Kaggle.
Data Preparation	Data normalization and removing the outliers from the dataset
Feature Selection	Extract essential features in a format supported by machine learning algorithms from datasets. Count Vectorizer is used in the proposed system to extract the features from text and convert a collection of text documents to a matrix of token counts.
Prediction	The practice of using data to create predictions or foresee future events. Cosine similarity is used to predict the similarity among users to produce the recommendation. Cosine similarity measures the similarity between two vectors of an inner product space.
Recommendation	Recommending movies based on the predicted similarity scores
Front-end	Creating a web application for movie recommendation using Streamlet and designing (image carousel),

	request movie poster from the dataset using API and JSON.
--	---

Technical Information

Back-end - We built back-end server with Python. Back-end server 1) initializes database so that API server can load data and predict the similarity. 2) handles requests from front-end by

Front-end - Front-end is built with Streamlit using PyCharm Framework.

Recommender Engine - Python

Web Services - JSON

Libraries - sklearn, pickle, stream lit and requests

Mxene Based Nano inks for Perovskite Solar Cells

Principal Investigator	Dr. G. Ramalingam, Assistant Professor, Department Nano Science & Technology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	Janana Priya V, Research Scholar, Department of Nano Science & Technology, Alagappa University (Science Campus), Karaikudi

Objectives

- To Prepare MXene Conductive inks.
- To prepare a suitable nanocomposite of Mxene.
- Prepared MXene and the composite were introduced in Dye Integrated Double Perovskite solar cells
- Introduced as HTL in the Fabricated Solar cells.
- Current versus voltage study was done.
- Photo stability tests were taken.

Summary of the Work done

Developed an air processed dye integrated double perovskite solar cells and compared its stability and efficiency with lead halide perovskite solar cells. The dye integrated double perovskite was coated over TiO₂ layer. First the TiO₂ paste was prepared and coated over the Cleaned FTO through Dr. Blade method. The FTOs were cut and cleaned several times using DD water and at last with ethanol and kept for drying at 80°C for Overnight. Then the TiO₂ paste was coated and dried at Room Temperature for few minutes and kept for Sintering at 500 °C. The sintered TiO₂ coated FTOs are then spin coated with double perovskite Cs₂AgBiBr₆ at 2000rpm for 30 Seconds and annealed at 450 °C for 15 minutes, everything under air atmosphere. The Annealed Perovskite coated FTOs are then soaked in N719 dye for 6 hours. While removing, the FTO plates were washed with 2/5 ethanol to remove excess dye. On the Other hand, the Hole Transport Layer was coated with the MXene/Copper cobaltite composite through Dr. Blade Method the coated FTOs are further dried at 80°C. Both the Electron and hole

transport layers were integrated through an electrolyte in between them with a spacer to keep an active area of 0.16cm. The Fabricated solar cells were further characterized.

Fabrication Techniques

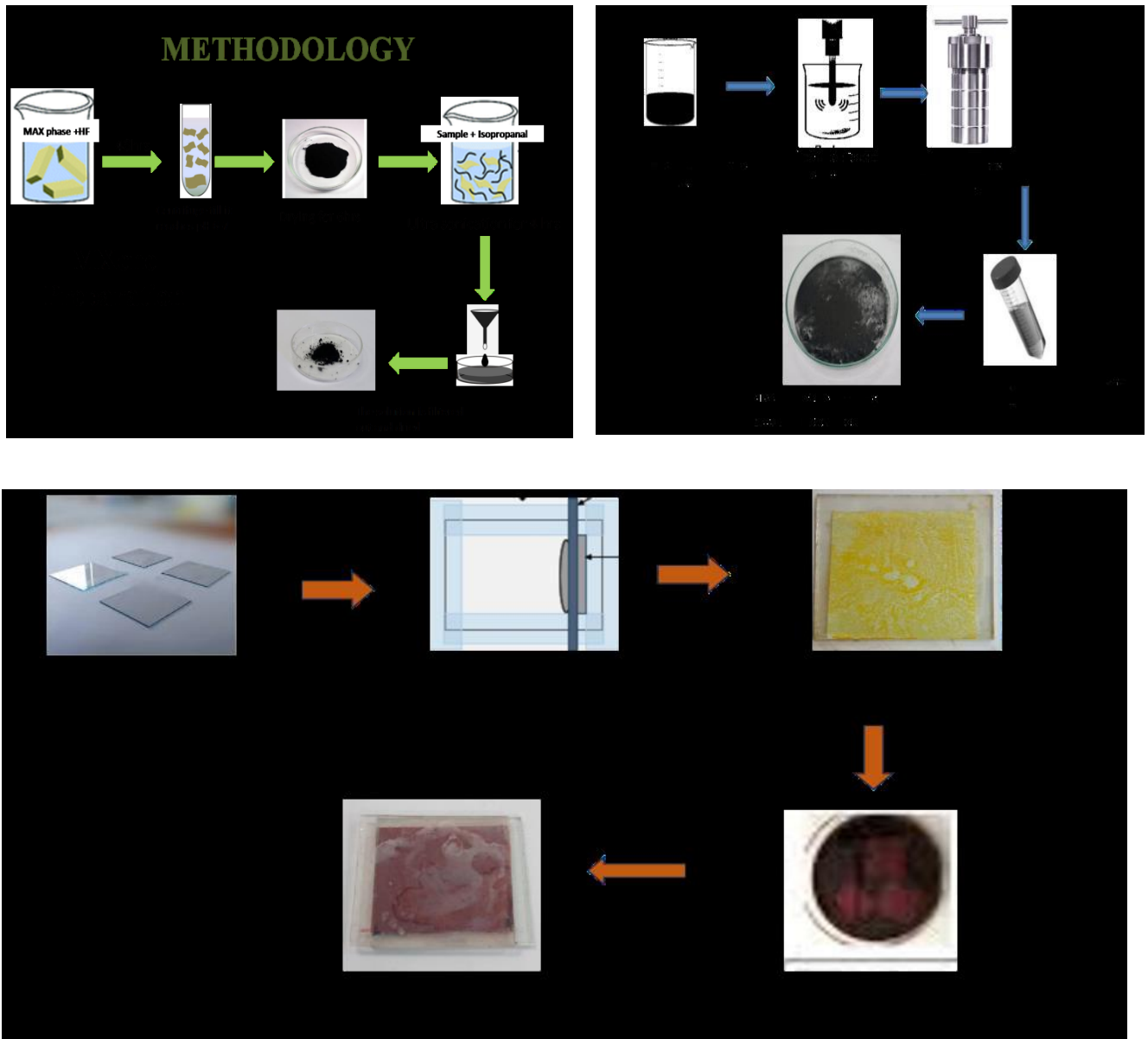


Fig 1; Synthesis Procedures of (a) MXene Preparation (b) Nanocomposite preparation (c) TiO₂ Coating and Solar Cell Fabrication.

Outcome of the Project

- Successfully Synthesized MXene and its Composite as hole transport layer.

- Dye integrated Double Perovskite solar cell has been fabricated in Air atmosphere.
- Solar cells were successfully fabricated and 2Volt of Voltage has been achieved.
- Further this solar cell can be developed by integrating it with Silicon solar cells for increasing the efficiency as the perovskite absorbs the high energy photons and Silicon solar cell absorbs low energy photons when they are integrated, we can get highly efficient perovskite solar cells.

Notable Results

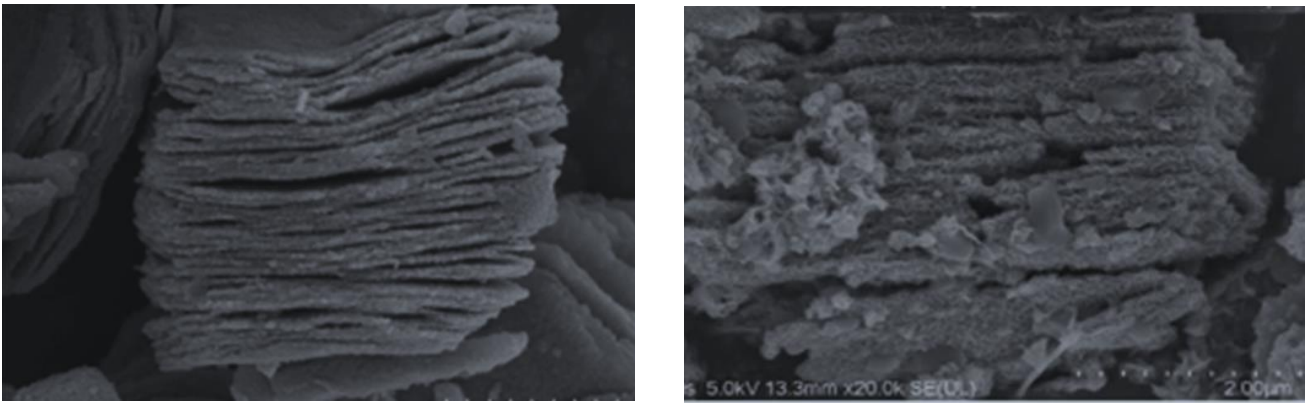


Fig 2; SEM mages of (a) MXene and (b) MXene/Nanocomposite

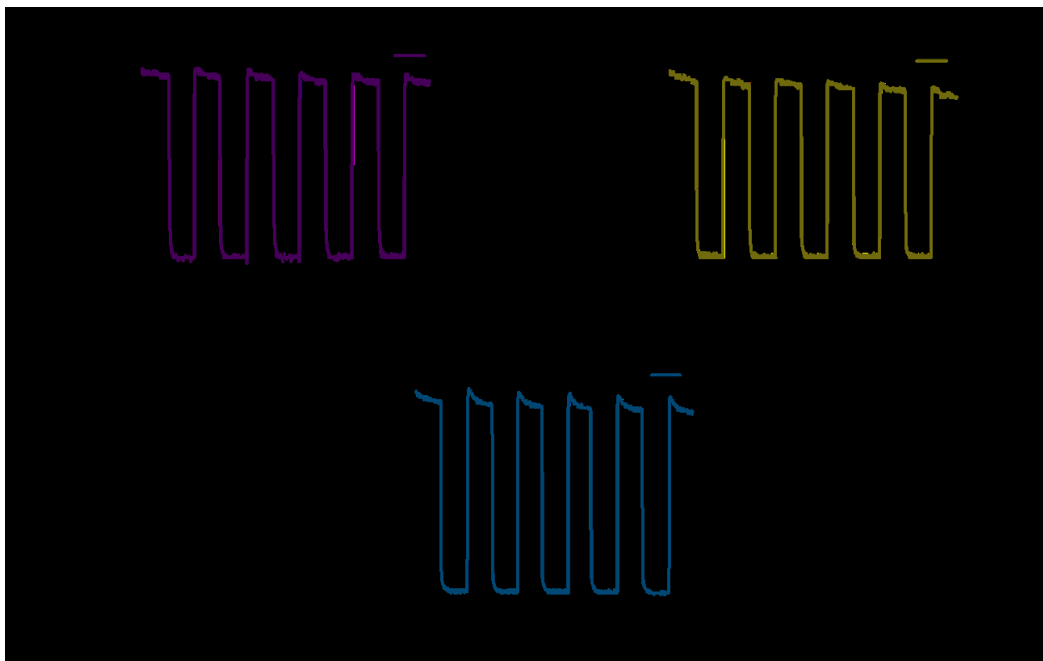


Fig 3; Photo stability test of Fabricated Solar cells

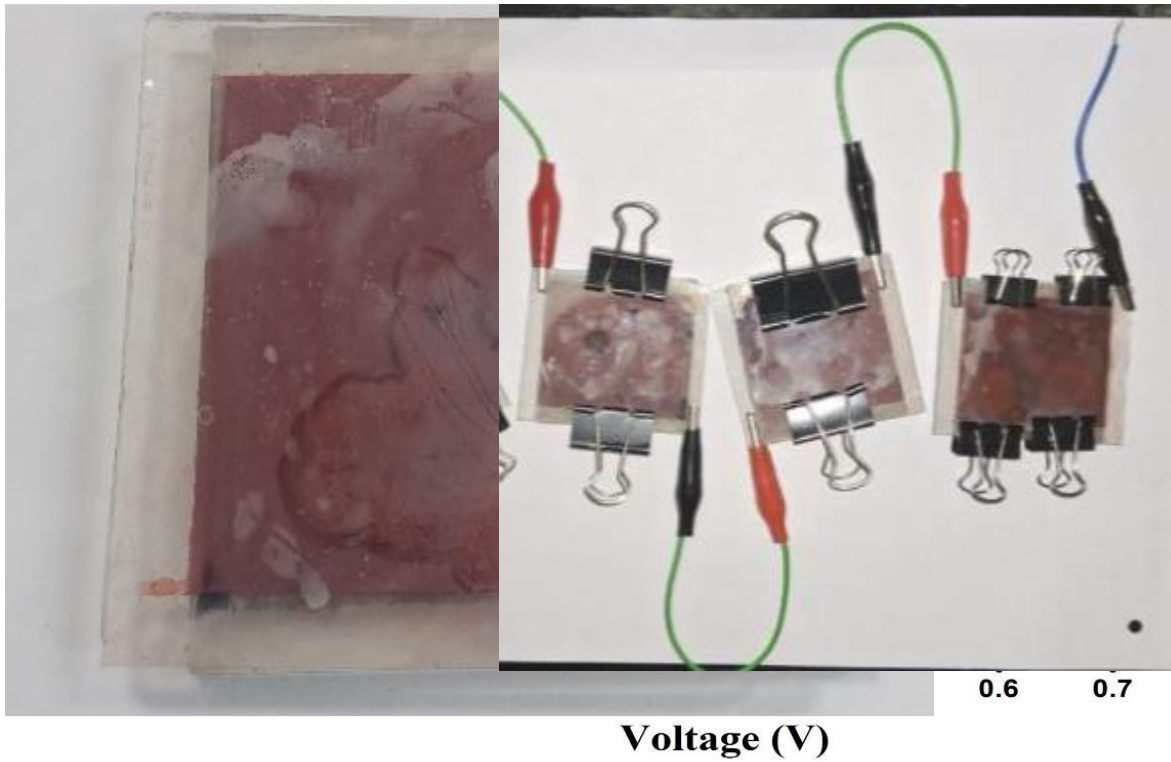


Fig 4; JV plot f or the Fabricates Solar cells

Sample Code	Jsc (mA/cm ²)	Voc (mV)	Fill Factor	Efficiency (η)
1	0.21	0.59	24.6	3.29%
2	0.2	0.59	26.9	3.2%
3	0.22	0.22	24.1	3.2%

Table 1; (b) Calculated and measured Values.

Fabricated Solar cells

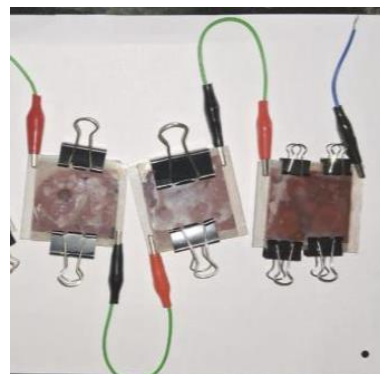
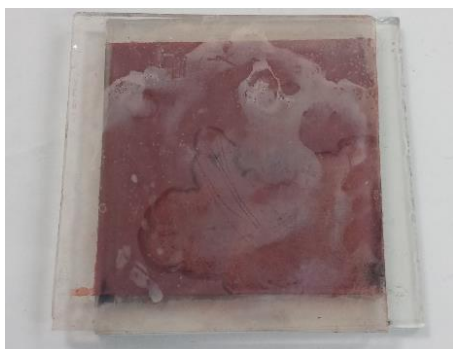


Fig 5; (a) The Fabricated Solar cells (b) The fabricated Solar cells in Series Connection

Preparation of Novel Transition metal Carbides and Composites for hybrid Super capacitor Applications

Principal Investigator	Dr. G. Ramalingam, Assistant Professor, Department Nano Science & Technology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	T. Keerthana, Research Scholar, Department of Nano Science & Technology, Alagappa University (Science Campus), Karaikudi

Objectives

- To Synthesis nanosheets from the MAX Phase.
- To Synthesize a Composite combined of Transition Metal Carbides and Transition Metal Oxides.
- To employ the prepared monolayer Mxene nano architectures for the application for Hybrid Supercapacitors.
- To Fabricate a Hybrid supercapacitor device employing the Mxene nano architectures which is to be demonstrated.
- To study the electrochemical performance of the fabricated Hybrid Supercapacitor device using CV, GCD and EIS and to calculate its Specific Capacitance.

Summary of the Work done

- ✚ Supercapacitors are energy storage devices that are capable of storing large amount of charge. Asymmetric supercapacitors, also known as hybrid supercapacitors or pseudo capacitors, are a specific type of supercapacitor that combines the characteristics of both traditional electrochemical capacitors (supercapacitors) and electrochemical batteries (such as lithium-ion batteries). They are designed to offer a balance between the high energy density of batteries and the rapid charge and discharge capabilities of supercapacitor.
- ✚ Mxenes are prepared from MAX phase by etching out the A element which corresponds to the thirteenth group elements of the periodic table. Ti₃C₂ MXene is the mostly used for the Supercapacitor applications as it provides enhanced

capacitance when compared to other Mxenes. This Ti_3C_2 Mxene can be synthesized from its MAX phase Ti_2AlC_2 . The typical synthesis involves Ti_2AlC and TiC which are to be taken in the ratio of 1:1 molar ratio and are ball milled for 18 hours. Once the process is over, the obtained product will be heated under Argon for 2 hours in the tubular furnace at $1150^\circ C$. Then it is ground and sieved through a 400-mesh sieve, the obtained product is the MAX phase Ti_2AlC_2 . To synthesize the Ti_3C_2 Mxene from the obtained MAX phase, 6M solution of concentrated HCl and DD Water are mixed with 1.98 g of LiF and are dissolved under stirring. To this 3 g of Ti_2AlC_2 is added under stirring at $40^\circ C$ for 45 hours. The obtained solution is washed with water for 5 times at 3500 rpm until the PH reaches 6. Then the Mxene nanoparticles are dried at $70^\circ C$.

- ✚ To prepare the supercapacitor electrode material, Mxene or transition metal oxide doped Mxene is employed as the cathode (-ve electrode) and activated carbon is employed as anode (+ve electrode). The working electrodes for supercapacitors are prepared by mixing weight ratio of (10:1:1) active Material (Mxene or transition metal oxide doped Mxene), PVDF and acetylene black, respectively. The mixture is homogeneously mixed with NMP and the resulting slurry is coated on a pre cleaned nickel foam ($3 \times 2 \text{ cm}^2$) and dried at $80^\circ C$ for 12 hours. Platinum wire and Ag/AgCl (KCl) are used as a counter and reference electrodes respectively and 3M KOH used as the aqueous electrolyte solution. The Asymmetrical supercapacitor was fabricated using MXene nanosheets as a cathode and anode is a activated carbon it was assembled with cellulose filter paper as a separator and different electrolytes are supposed to be tried out. The electrochemical performance of the fabricated Supercapacitors was analysed through Cyclic voltammetry (CV), galvanostatic charge discharge (GCD).

Status of the Project: Ongoing

Outcome of the Project

The Asymmetrical supercapacitor was fabricated using MXene nanosheets as a cathode and anode is activated carbon it was assembled with cellulose filter paper as a separator and different electrolytes are supposed to be tried out. The electrochemical

performance of the fabricated Supercapacitors was analysed through Cyclic voltammetry (CV), galvanostatic charge discharge (GCD) analysis.

Asymmetric Supercapacitor was successfully fabricated. Specific Capacity of Titanium Carbide is 175 F/g at 10 mV/s.

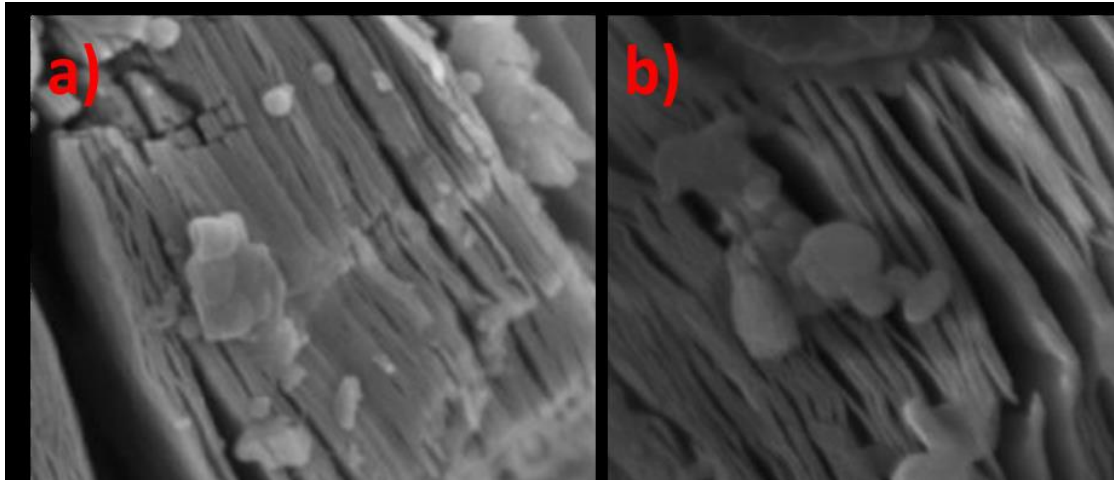


Fig. 1. a) SEM image of Titanium Carbide (Ti₃C₂). b) Enlarged Image of Ti₃C₂

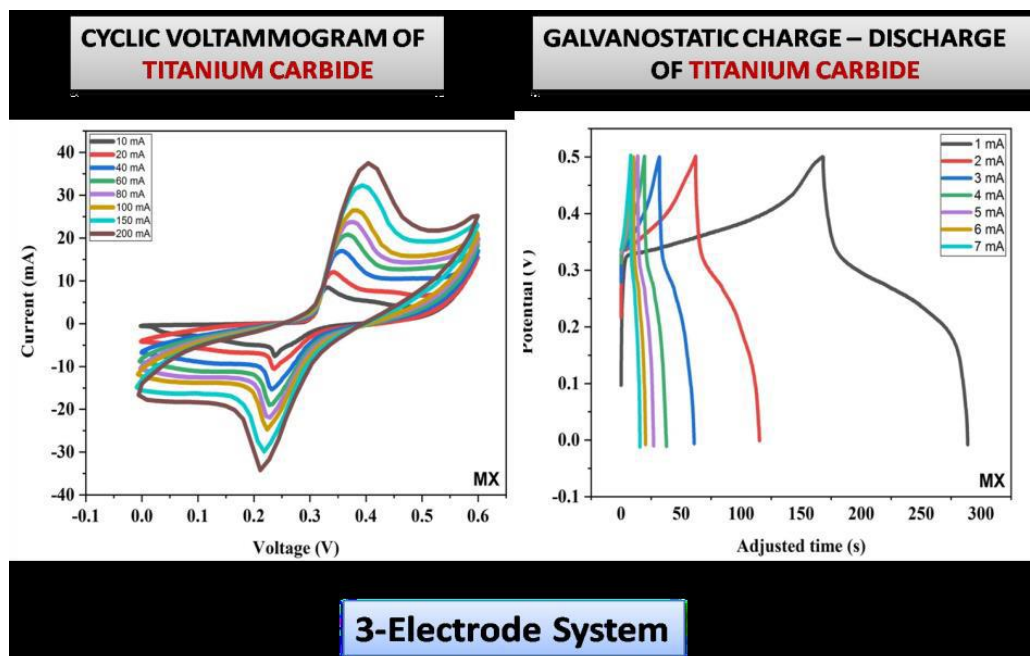


Fig. 2. Cyclic Voltammogram and Galvanostatic charge – discharge of Titanium Carbide.

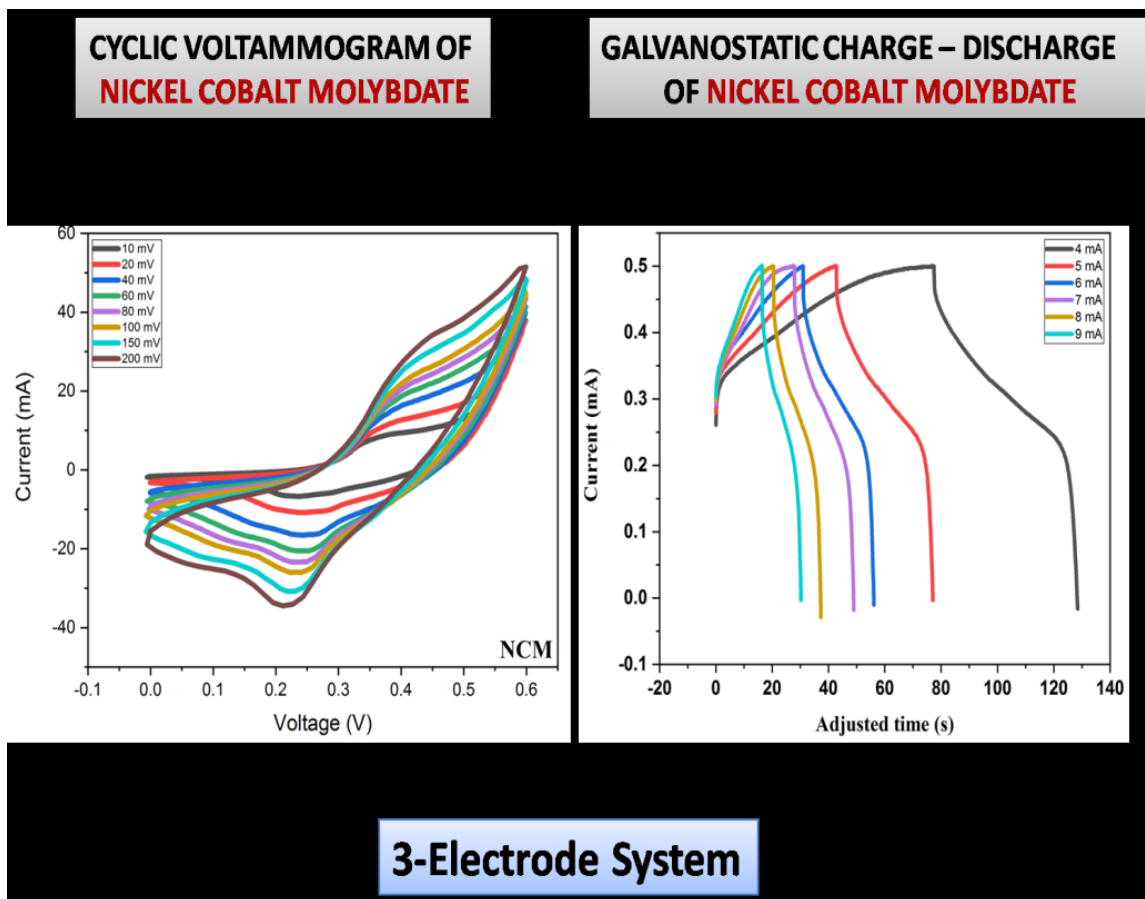


Fig. 3. Cyclic Voltammogram and Galvanostatic charge – discharge of Nickel Cobalt Molybdate.

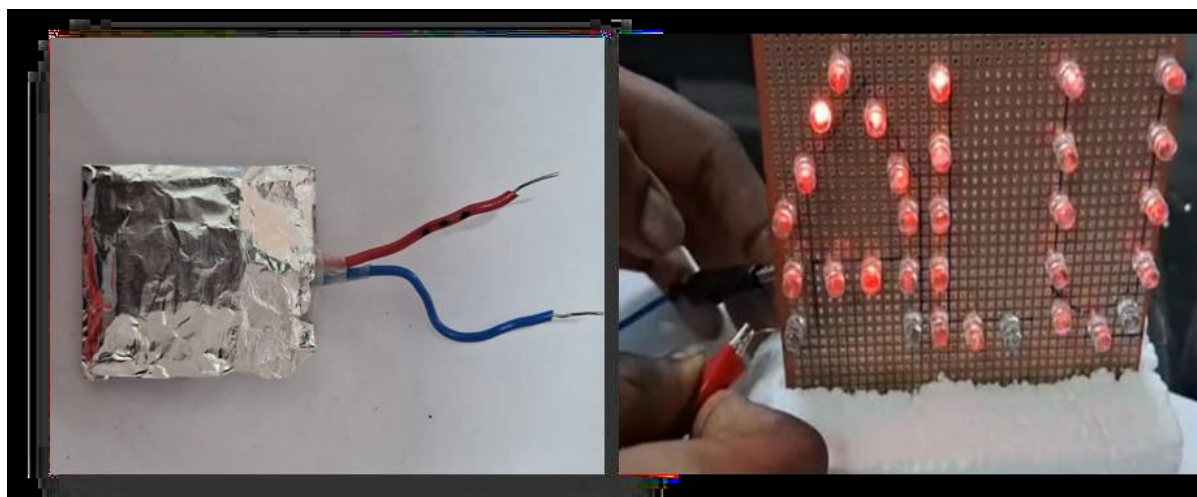


Fig. 4. Fabricated Asymmetric Supercapacitor

An Optimization model for sugarcane cultivation using IoT and Machine learning techniques

Principal Investigator	Dr. S. Santhosh Kumar, Department of Computer Science, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	J. Arumai Ruban, Research Scholar, Department of Computer Science, Alagappa University (Science Campus), Karaikudi
Project Fellow	M. Mohamed Jassim, 2nd Year M.Sc. Computer Science, Department of Computer Science, Alagappa University, Karaikudi.

Objectives

- Designing an optimization device dedicated to computing processes in sugarcane cultivation.
- Implementation of a comprehensive approach involving the continuous monitoring of soil water content and micronutrient levels.
- Integration of a soil NPK sensor to accurately detect nitrogen, phosphorus, and potassium levels in the soil.
- Utilizing a soil moisture sensor to analyze moisture content and soil water levels for enhanced precision.
- Deployment of these advanced detection tools for systematic data collection from sugarcane crops across different factors and locations.
- Incorporating a weather monitoring sensor to assess climatic conditions for strategic planning.
- Development of optimization software utilizing the collected data, aiming to calculate the current state and recommend ratios for necessary content additions during specific crop growth phases.
- Establishment of a connection between the optimization tool and a cloud server, enabling the display of outcomes to farmers through a user-friendly application in their preferred language.
- Assurance of improved farming performance in sugarcane cultivation under diverse land conditions.

- Anticipating potential benefits for agripreneurs in the Sivagangai region through the implementation of this system.

Summary of work done

- The initial step is completed by gathering data relevant to sugarcane cultivation in the Sivagangai region. This data likely includes information on soil types, climate, and other environmental factors.
- Sensor Identification and Analysis: The second step is identified and analysed suitable sensors crucial for monitoring various aspects of sugarcane cultivation.
- Water Management Information: This project also included collecting data on water management practices for sugarcane cultivation. This step aims to understand and optimize water usage in the cultivation process, considering the specific needs of sugarcane in the given region.
- Based on the initial preparatory work we are suggesting the new harvesting cultivation method for sugarcane.
- Based on the initial pilotary study, challenges often arise during the germination of seed canes, with up to half facing difficulties in sprouting. To overcome this hurdle, a solution involves planting seed canes in separate bags within the nursery or garden. This method ensures an optimal environment for initial growth, resulting in healthy sprouts. Once matured, these sprouts are transplanted into the fields, guaranteeing a high success rate. This innovative bagging method has proven remarkably effective, resolving germination issues and contributing to robust growth in all cultivated seed canes. The careful monitoring and intervention during the bagging process improve success rates and also empower agripreneurs to achieve higher yields and increased profitability in sugarcane cultivation. This strategic approach exemplifies the fusion of traditional agricultural practices with innovative techniques, enhancing the overall success of sugarcane cultivation.
- Model Development: Currently, the project is in the development phase, focusing on creating a model that likely integrates data from the previous steps. This model could potentially provide insights and recommendations for optimizing sugarcane

cultivation in Sivagangai, incorporating data from sensors and water management practices.

Status: Ongoing

Outcome of the project

- A water and micro nutrition optimization model for sugarcane cultivation using IoT and Machine learning is a patentable product.
- The developed optimization device will be employed to monitor soil water content and micro-nutrient levels, providing real-time insights into the farm's condition
- Identification and analysis of suitable sensors for monitoring various aspects of sugarcane cultivation were successfully attained.
- This computes the actual state of farm land and provides a ratio of missing content to be added for certain duration of crop growth.
- Gathering relevant data for sugarcane cultivation in the Sivagangai region has been successfully completed.
- The Optimization tool connected with cloud server displays the outcome to the farmers through a user application in their desired language.
- Farmer can easily check the field condition from anywhere without any hassle. This system ensures “any land cultivation” a better farming performance in sugarcane cultivation.
- This device is will applicable for both existing sugarcane farmers and new farmers with lack of knowledge in sugarcane farming. It intimates the amount of water and fertilizer needed to the field.
- This system could be useful to the agripreneur of Sivagangai region.

Biochar Based Inoculum Development for Sustainable Agriculture

Principal Investigator	Dr. T. Kavitha, Department of Microbiology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	Mr. V. Manivinoth, Research Scholar, Department of Microbiology, Alagappa University (Science Campus), Karaikudi

Objectives

- ❖ To Select the suitable biomass for biochar Production.
- ❖ Production and Characterization of biochar.
- ❖ Adapting methodology for designing biochar for better adsorption of PGPR.
- ❖ Improve the longevity of PGPR to be more effective for colonization.

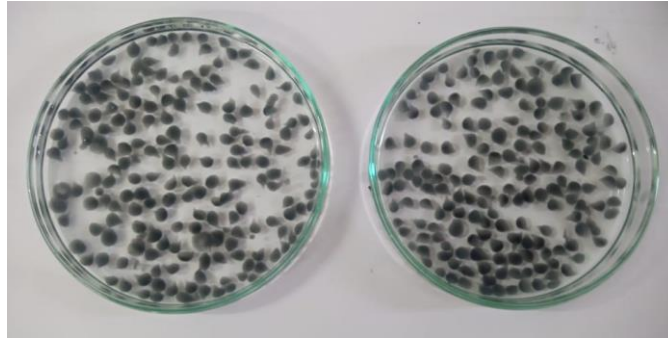
Summary of the work done

The project focuses on developing a sustainable agricultural inoculum using biochar as a carrier for Plant Growth Promoting Rhizobacteria (PGPR). The agricultural waste corncob biomass was collected and dried for 24 h to remove moisture content. The corn cob biomass went through pyrolysis, a method involving the heating of biomass in absence of oxygen, was employed to produce biochar at various temperatures ranging from 250°C to 900°C were tested. Among this biochar produced at 900°C exhibited higher conductivity, indicating its potential as an effective carrier. The obtained biochar was analysed for surface morphology using Scanning electron microscopy (SEM) this step provides insights into the physical structure (porosity) and characteristics of the biochar. The development of this commercial product contains microbial consortium such as *Achromobactersp*, *Bacillus*sp, *Pseudomonas* sp. The microbial consortium is blended with the biochar the incorporation of beneficial microorganisms into the carrier matrix will subsequently enhance plant growth and soil fertility. The blended mixture was further mixed with sodium alginate for encapsulation the mixture was introduced drop by drop into a calcium chloride solution. The process facilitates the formation of calcium alginate beads, which acts as carrier for encapsulated microorganisms.

Status: On-going

Outcome of the project

The developed biochar-based inoculum encapsulated with PGPR, will ensure the sustainable release of microbes to the soil, improve the soil fertility. When compared to the conventional method of inoculum development this biochar-based inoculum developed from renewable source, Hence the cost of production is low.



Development of pharmaceutical composition comprising anti-miRNA antisense oligonucleotides against aging

Principal Investigator	Dr. K. Balamurugan, Professor & Head, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	Ms. T. Gowripriya, Research Scholar, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi

Objectives

- Formulation and quality assessment of active ingredients and specific miRNA mimics designed with thermostable nucleotides.
- Validation of formulated skin cream in aged *C. elegans*

Summary of the work done

Many pharmaceutical products or direct application of a substances are trouble to swallowing, headaches, memory loss and extremely dry eyes. The phytochemicals with the potential on anti-aging in the form of cream in a lower concentration for daily use could pave a way to delay the aging. In this aspect curcumin and peppermint oil were utilized against UV-A induced aging. Curcumin, a major component of rhizomes of turmeric (*Curcuma longa* L., family: Zingiberaceae), is one of the most extensively studied natural products for various biological activities. Peppermint oil works as a strong antioxidant. Peppermint is a hybrid species of spearmint and water mint (*Mentha aquatica*). The essential oils are gathered by CO₂ or cold extraction of the fresh aerial parts of the flowering plant. The formulated cream with the active principles sustains in 37 °C and 20 °C. No oil formation or precipitation. White in color not changed in open condition. 4°C storage forms a wax and change the texture in to harder. Non-invasive application of formulated cream has no side effects such as skin darkening and skin irritation. The texture was not altered. The cream spread over the skin evenly. The formulated cream has Peppermint aroma.

Status: Ongoing

Outcome of the project: Product developed

Anti-aging skin care cream with curcumin and peppermint oil was formulated. Efficacy analysis is on-going.

Product: Skin care cream



Collected in tubes



Texture- no change in different temperature conditions



Non-invasive application

Light and fast-absorbing to rich and creamy

**Eco-friendly Herbal Pesticide formulation against Mealy Bugs
(Hemiptera: Pseudococcidae) using traditional plant leaf extracts
through fermentation with Pink Pigmented Facultative
Methylo trophs Consortium**

Principal Investigator	Dr. K. Pandimadevi, Professor, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	Dr. S. Aravindh, Executive Director & CSO, Department of Biotechnology, Elies Biotech Private Limited, Erode, Karaikudi

Objectives

The proposed work aims to the Eco-friendly Herbal Pesticide formulation against Mealy Bugs (Hemiptera: Pseudococcidae) using traditional plant leaf extracts through fermentation with Pink Pigmented Facultative Methylo trophs Consortium

- Screening of traditional plants with pest-repellent properties – Plants with latex, Plants with succulent leaves, plants that are not generally preferred by herbivores, and plants with repellent odor and bitter taste as screening criteria.
- Fermentation of the screened plant leaf pulp with Pink Pigmented Facultative Methylo trophs (PPFM) (Microrapid®)
- Field trial/Product Validation of the fermented extract enriched with pest retardant compounds and beneficial inoculums against Mealy Bugs (Hemiptera: Pseudococcidae) and crop health

Summary of the work done

During the initial period (0-3 months) of the project:

The following plants with repellent odor (*Volkameria inermis*) and bitter taste (*Citrullus colocynthis*, *Ipomoea carnea*, *Azadirachta indica*), plants with latex (*Jatropha gossypifolia*, *Calotropis procera*, *Nerium oleander*), succulent leaves (*Aloe barbadensis miller*, *Opuntia ficus-indica*), and those not generally preferred by herbivores (*Datura stramonium*, *Justicia adhatoda*) were selected for herbal biopesticide formulation.

Preparation of leaf pulp mixture

500g of all the selected plant leaves mentioned above were picked and pulped along with 500g of turmeric powder (*Curcuma longa*) using a commercial blender.

Fermentation of the leaf pulp with PPFM Methylotriph Consortia

Chopped plant materials were placed in the silo of a Solid Substrate Fermentor and filled with 14 L of water, 420 ml of molasses, and 420 ml of PPFM Methylotriph Consortia. The materials underwent fermentation for approximately 45 days. When the pH dropped to below 3.7, the solution (Fermented Herbal Pesticide - FHB) was passed through a 0.1 mm muslin cloth and diluted in water (0.5%).

Work to be done

1. Conduct *in vivo* bioassays on the Cotton Mealy bug, *Phenacoccus solenopsis*, by mass culturing them on sprouted potato tubers. Collect third-instar nymphs and perform bioassays using Fermented Herbal Pesticide (FHB) solutions. Assess mortality after 24, 48, and 72 hours.
2. Execute field trials using a randomized block design to evaluate FHB efficacy at 2.5% and 5% concentrations. Maintain an untreated control. Record mealy bug populations on selected plants after each of two sprays at 15-day intervals. Estimate percent reduction.
3. Repeat field trials every 3 months. Assess the population of mealy bug crawlers and adults per 5 cm shoot length from 10 randomly selected plants on days 3, 7, 10, and 14 after treatment. Estimate the mean percent reduction of the mealy bug population due to botanicals.

Status: Ongoing

Outcome of the project: Development of a novel fermented herbal pesticide (FHB) effective against the Cotton Mealy bug.

Development and formulation of skin care night cream comprising Gallic acid and Piperine against UV-A induced aging

Principal Investigator	Dr. K. Balamurugan, Professor & Head, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	Mr. Vigneshwaran KR, Research Scholar, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	Ms. T. Gowripriya, Research Scholar, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi

Objectives

- Formulation and quality assessment of active ingredients and specific miRNA mimics designed with thermostable nucleotides.
- Validation of formulated skin cream in aged *C. elegans*.

Summary of the work done

UV-A radiation, a component of sunlight's ultraviolet spectrum, though less energetic than UV-B radiation, significantly contributes to skin aging by its deep skin penetration. This aging process, known as "photoaging," results from UV-A radiation breaking down collagen and elastin fibers responsible for skin elasticity and firmness. Over time, this can lead to the development of wrinkles, fine lines, and sagging skin. To combat UV-A-induced skin damage and photoaging, we've developed a night cream with plant-based active compounds. Our formulation includes gallic acid and piperine, combined with a non-toxic base chemical for the skin care cream. Gallic acid, also known as 3,4,5-trihydroxybenzoic acid, is a phenolic compound found in various parts of plants, including bark, wood, leaves, fruits, roots, and seeds. Piperine, on the other hand, is the alkaloid responsible for the pungency of black pepper (*Piper nigrum*) and long pepper (*Piper longum*). Piperine enhances the bioavailability of certain nutritional substances and drugs. To verify the effectiveness of the synergistic combination of gallic acid and piperine in our skin care night cream, we conducted tests using the nematode model, *Caenorhabditis elegans*. Our results demonstrated that the gallic acid and piperine combination has synergistic effects, reducing UV-A-induced damage in the model system.

The choice of a night cream is due to the increased likelihood of day cream precipitation on the skin caused by skin dehydration, which can affect the absorption of active compounds. To address this issue, we have formulated a night cream to enhance skin hydration and absorption, thereby reducing skin damage caused by UV-A exposure.

Status: Ongoing

Outcome of the project: Product developed

Anti-aging skin care cream with Gallic acid and Piperine was formulated. Efficacy analysis is on-going.

Product: Skin care cream



Collected in tubes



Texture- no change in different temperature conditions



Non-invasive application

Novel Proton Exchange Membrane (Pem) For The 96% Overall Cost Reduction in Microbial Fuel Cell (Mfc) Based Bioelectricity Generation

Principal Investigator	Dr. A. Arun, Professor & Head, Department of Microbiology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	Keerthiga. K, Research Scholar, Department of Microbiology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	A. Abubakkar Siddik, Research Scholar, Department of Microbiology, Alagappa University (Science Campus), Karaikudi

Objectives

- To develop and characterize a cost-effective and environment-friendly novel cement-based Bridge Membrane (CBM) as a proton exchange material.
- To study the performance of novel CBM membranes in Microbial Fuel Cell (MFC) systems using domestic wastewater as the substrate along with the potential electroactive bacteria in the MFC systems.
- To compare the performance of CBM with Nafion 117 membrane based on electrochemical property analysis.
- To investigate the proton conductivity measurements and power generation using wastewater consortia in batch-type MFC systems with CBM and Nafion 117.

Summary of the work done

Easily available low-cost Portland cement was taken as low-cost solid material. An Ordinary Portland Cement (OPC) and a salt selection filtered on the category of conductive salts from various articles and a salt material comparison study was done. Observation of results revealed that sodium chloride and potassium chloride salts are best suitable for proton conductivity. The optimization of different concentrations of both salt with suitable ratio of cement were performed. The optimized mixture was made into a type of bridge-like structure using casting method. The solid form cement bridge will prevent water and nutrients passage and make the separation between the anode and cathode chamber. After drying, the ion conductivity and resistivity was measured by two

probe methods. The conductivity and bioelectricity production were analysed using EIS and polarization curve. The synthesized Membrane Named as NCSCS PEM.

The power production compared with commercial membranes MFC – NF (STWW) showed the lowest power density, of about $13.40 \pm 0.87 \text{ mW/m}^2$ and AATB1 strain-based MFC – NF (AATB1) of $126.6 \pm 1.06 \text{ mW/m}^2$. To compare these results in contrast, The NCSCS PEM showed higher power density production of $204.04 \pm 0.87 \text{ mW/m}^2$ and $161.58 \pm 1.67 \text{ mW/m}^2$ in the MFC - NCSCS (AATB1) and MFC – NCSCS (STWW) substrate respectively.

Status: Ongoing

Outcome of the project

The synthesized NCSCS PEM was implemented in dual chamber of Microbial Fuel cell for bioelectricity production. The product-NCSCS was characterized and proved as membrane, patent applied. The reduced cost of 96% when compared with the Nafion 117 membrane will give more chances the ease of implementation into the field.



Biodegradable Plastic Films from Lignin, Ligno Cellulosic Wastes and Their Biodegradability in Soil and Water

Principal Investigator	Dr. A. Arun, Professor & Head, Department of Microbiology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	M. Thulasi, Research Scholar, Department of Microbiology, Alagappa University (Science Campus), Karaikudi

Objectives

- To produce bioplastic – Poly Hydroxy Butyrate (PHB) from commercial lignin by using various chemical methods.
- To prepare biodegradable films from commercial lignin-based PHB and their characterization.
- To study the biodegradability of the PHB films from commercial lignin-based PHB in soil and water and their characterization.
- To extract lignin from lignocellulosic waste using various hydrolysis methods.
- To produce bioplastic PHB from lignocellulosic waste-derived lignin by using various chemical methods.
- To study the biodegradability of the PHB films from lignocellulosic waste-derived lignin-based PHB in soil and water and their characterization.

Summary of the work done

Significant progress has been made in the production of Poly Hydroxy Butyrate (PHB) from commercial lignin. We employed various chemical methods, including Epoxidation, Oxypropylation and Pyrolysis, to effectively convert lignin into PHB Film. This process involved four grams of depolymerized hydrolysis lignin was dissolved in 12 grams of epichlorohydrin (at an epichlorohydrin/ lignin molar ratio of 6) and mixed with tetrabutylammonium bromide (0.2 wt% of lignin) and 12 ml of distilled water were incubated at 80°C for one hour with stirring (Tran & Lee, 2018). The results have been promising, with PHB biofilm. Simultaneously, we have successfully prepared biodegradable films using the lignin-based PHB. These films have been carefully crafted

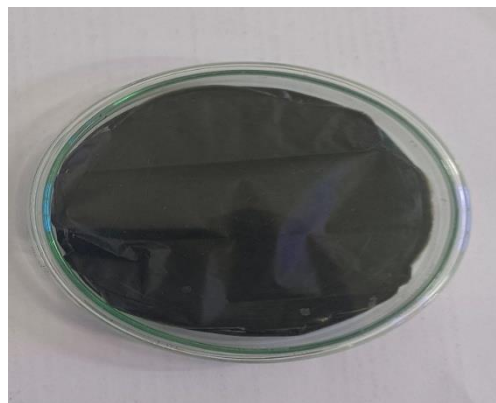
to meet the desired specifications for biodegradability. Our methods for film preparation include solvent casting method. To ensure the quality and performance of the biodegradable films, we conducted a comprehensive characterization process. This involved FTIR, resulting in valuable data regarding the films' physical and chemical properties.

The first three months of our project have been highly productive. We have successfully produced Poly Hydroxy Butyrate (PHB) film from commercial lignin using various chemical methods, and we've also prepared biodegradable films from lignin-based PHB. These achievements mark significant progress towards our project's goals of developing sustainable bioplastics and biodegradable materials. The results obtained so far are promising, indicating the potential for these materials to have a positive impact on environmental sustainability. As we move forward, we will continue to refine our methods and conduct further testing to produce biodegradable films from lignocellulosic waste material and explore potential applications.

Status: Ongoing

Outcome of the project

PHB developed as a result of these proposed works which serve as three purposes: lowering the cost of biodegradable plastics, reducing environmental pollution problems caused by conventional plastics, and solving the lignocellulosic waste disposal problem.



Development of *Nigella sativa* active constituent based Oral Fast-Dissolving Thin strips (OFDTs) against neuronal disease

Principal Investigator	Dr. K. Balamurugan, Professor & Head, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	T. Vinitha, Research Scholar, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi

Objectives

- Formulating the oral fast dissolving thin strip with *Nigella sativa* active ingredient.
- Evaluation of quality and efficacy of formulated strip using neuronal specific *C. elegans* strains.

Summary of the work done

Initially, the selection of strip formulations and their drug-binding capabilities were analyzed. Sodium Alginate and Gelatin, two edible natural biopolymers, were used with PEG-400 to develop 10 different formulations for drug-loaded strips. The mixtures were stirred at room temperature, then cast into sterile petri dishes to form the strips, which were dried at 30°C for 48 hours. The optimal strip formulation was then coated with 20 mg of Thymoquinone. Finally, the best formulation consists of 0.75g of Sodium Alginate, 0.05 g of PEG and 1 drop of PEG-400 (**Formulation 5**).

Status: Ongoing

Outcome of the project

Research on *Nigella sativa*-based OFDTs shows promising formulations for effective, patient-friendly neurotherapy, demonstrating rapid action, easy use, and enhanced compliance.

3D Video Stabilization Using Weight Space Based Optimization

Principal Investigator	Dr. K. Mahesh, Professor & Head, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	T. Vinitha, Research Scholar, Department of Biotechnology, Alagappa University (Science Campus), Karaikudi

Objectives

- Video Stabilization is an essential component of a Visual Quality Enhancement.
- It recovers feature extraction and tracking in shaky videos.
- Video stabilization to improve the quality of consumer-level videos, which were captured during walking, running, riding, driving, amongst others.
- In the past years although various video stabilization methods were proposed based on the smoothing of 2D, 2.5D or 3D camera paths to need a novel deep learning methods to solve the 3D video stabilization Efficiently.

The Main Objective of this work is

- A Novel Algorithm to develop the weight space to get the Fast Video.
- A Novel method to enhance the CNN based weight space in Manage 360* Angle to produce the efficient 3D video stabilization.
- To eliminate the effect of high-frequency motion of the camera, which causes the shakiness.
- Process the batches of frames to replace each frame with a region.
- extracted from that frame to produce a stabilized version of the input videos.
- Video quality can be improved by reducing or eliminating unwanted oscillations.
- Summary of the work done: We have done the background work. Waiting for the requirements.

Status: Ongoing

Outcome of the project: --

Smart Weighing Machine in Image Processing for Remote Weight Measurement and Monitoring

Principal Investigator	Dr. A. Nagarajan, Assistant Professor, Department of Computer Application, Alagappa University (Science Campus), Karaikudi
Co-Principal Investigator	S. Sneha, Research Scholar, Department of Computer Application, Alagappa University (Science Campus), Karaikudi

Objectives

- To prepare an automated billing system with the help of image processing.
- To improve the management of the self-billing system.
- To be categorized into different categories (vegetables, stationary, grocery items).
- To maintain the sold item data for analysing and predicate for future purpose.
- To monitor stock details and expired alerts

Summary of the work done

In the initial phase of our project, we're focused on setting up a robust database system using Python and SQL, the standard languages for database management and programming. Our database will be designed to efficiently store detailed specifications for various items, with an initial focus on fruits. We aim to collect an extensive dataset comprising a diverse range of fruits, which will be used to train a machine learning model capable of detecting and categorizing different types of fruits from images. This detection function will be integrated into our system, allowing users to input an image of a fruit and have the system identify it accurately.

The creation of this database involves several key steps:

Database Schema Design:

We defined the structure of our database, including the tables, fields, and Relationships between them. For our fruit dataset, this might include tables for fruit names, colors, sizes,

shapes, and other relevant attributes.

Data Collection: We gathered information on a wide variety of fruits, including images, names, colors, sizes, shapes, and other attributes. Those data formed the basis of our training set for the machine learning model.

Data Entry: We entered the collected data into our database, ensuring that it is properly formatted and organized according to the defined schema.

Database Management: Once our database is populated, we use Python to efficiently manage and query the data. This involves writing SQL queries to retrieve specific information, as well as implementing functions to insert, update, and delete records as needed.

Machine Learning Integration: Finally, we trained a machine learning model using the data from our database. This model was capable of identifying fruits from images, and we integrated it into our system to provide users with a convenient and accurate fruit detection function.

Overall, this project provided a solid foundation for further development, enabling us to build a versatile and efficient system for managing and analysing data on a wide range of items, with a focus on fruits in this initial phase.

Status: Ongoing

Outcome of the project

Our proposed project of developing a smart weighing solution using image processing technology has the potential to revolutionize the weighing industry. The automated billing, remote measurement, and monitoring features of our product will greatly benefit small and medium-sized businesses. We hope to bring this innovative solution to market and make a positive contribution to the industry. Some

potential uses of a smart weighing machine in image processing for remote weight measurement and monitoring include: Manufacturing, Agriculture, Healthcare, Retail.

Entrepreneur skills orientation in relation to social challenges with special reference to rural women under graduate student teachers

Principal Investigator	Dr. M. Parimala Fathima, Assistant Professor, Alagappa University College of Education, Alagappa University (Education Campus), Karaikudi
Co-Principal Investigator	B. Pavithra, M. Ed Student, Alagappa University College of Education, Alagappa University (Education Campus), Karaikudi

Objectives

- To identify the level of social challenges that affects the entrepreneur skill among student teachers.
- To develop entrepreneur skill among student teachers.
- To implement the entrepreneur skills orientation for improvement of social skills among student teachers.
- To find out the level of social skills through entrepreneur skills among student teachers.

Rational of the proposed research

Entrepreneurship is the art of starting a business, basically a start-up company offering creative product, process or service. We can say that it is an activity full of creativity. An entrepreneur perceives everything as a chance and displays bias in taking decision to exploit the chance. An entrepreneur is a creator or a designer who designs new ideas and business processes according to the market requirements and his\her own passion. To be a successful entrepreneur, it is very important to have social skill to strong building abilities. For example, leadership attributes are a sign of successful entrepreneurs. Some political economists regard leadership, management ability, and team building skills to be the essential qualities of an entrepreneur. In consideration of this above rational concept the researcher has decided to carry out the study with entitled on: "ENTREPRENUER SKILLS ORIENTATION IN RELATION TO SOCIAL CHALLENGES WITH SPECIAL REFERENCE TO RURAL WOMEN UNDER GRADUATE STUDENT TEACHERS."

Necessity and the significance of the proposed research

Entrepreneurship skills are an important key element towards enhancing an independent and productive living for student with social skills. It gives us a feeling of certainty and the ability to take action in a constantly-changing world. Social skills impact your decision-making process, your problem-solving skills, your communication skill, and your overall well-being. It also influences motivation, as people with a healthy, positive view of themselves understand their potential and may feel inspired to take on new challenges. Hence, entrepreneurship skills are most powerful weapon to driven entrepreneurial spirit and giving personal competencies that enable to understand and accept their weaknesses and strengths, which in turn can maximize their strengths to be successful.

Summary of the work done

The Entrepreneurship Innovation in Residential scheme, has been conducted on 18.01.2024 in the Alagappa Model Higher Secondary School, Principal Rajapandian initiated the scheme. Around 20 students were participated.



The aim of this report is to provide a comprehensive overview of a project that has been undertaken as a part of an entrepreneurship. The Project also involves the creation of a business plan and the implementation of the proposed idea.



The project provided an opportunity for the students to develop and apply various entrepreneurial skills. The Process of ideation, market research, and creating a business plan helped students understand the importance of identifying a gap in the market and the need for innovation. The project also involved developing essential skills such as critical Thinking, risk taking, self-care and well-being and decision making.

The Entrepreneurship Innovation in Residential scheme, has been conducted on 24.01.2024 to focus on women undergraduate students from various B. Ed colleges.



Furthermore, the project also highlighted the importance of social responsibility in entrepreneurship. Addressing social challenges, such as environmental degradation, through society. The aspect of socially responsible, entrepreneurship was emphasized throughout the project.

The project had a particular focus on women Undergraduate, aiming to empower them in the field of entrepreneurship. Through this project, the students were able to gain hands-on experience in developing and implementing a business idea. This experience provided them with the confidence and skills needed to pursue their entrepreneurial ambitions.



The following dimension skills set are active listening. Cultural sensitivity, perspective taking, body language interpretation, emotional intelligence, empathetic communication, community engagement. Group discussions and debates, peer support and mentorship, critical thinking, creativity, research skills, data analysis, problem identification, innovative thinking, collaboration, failure resilience, ethical awareness, social awareness, critical thinking, empathy, cultural competence, stress management, emotional regulation, physical fitness, healthy eating habits, sleep hygiene, time management, relaxation techniques, coping strategies, counselling and mental health awareness.

Automation Water and food feeding monitoring system for home and farming Industry using Internet of Things (IOT)

Principal Investigator	Dr. A. Senthilrajan, Professor & Head, Department of Computational Logistics, Alagappa University, Karaikudi
Co-Principal Investigator	Dr. A. V. Karthik, Department of Computational Logistics, Alagappa University, Karaikudi

Objectives

- To create an integrated automatic water and food feeding system for animals and birds using IoT based technology.
- To design and develop a real time device to automate and regulate the feeding of animals and birds using IoT.
- To efficiently utilize the scarce resources for water and food feeding among the animals and birds.
- To provide the food and water at appropriate times and with healthy portions using IoT.
- To minimize the waste of consumption pattern of water and food items.

Summary

The main aim of this project is to detect the spoilage of fruits and vegetables in warehouses. India is the second largest country to produce of fruits and vegetables in the world after China. We maintain the fruits and vegetable in warehouse. In addition to proper temperature and humidity, all fruits and vegetables must be kept in a dark, aerated environment standing water, however, must be avoided as it will quickly led to rot. Most fruits and vegetable spoil easily because of damage caused by microorganisms.

Status: Ongoing

Development of Mobile-Based Adaptive Behaviour cum interpersonal skill Training for children with autism spectrum disorder

Principal Investigator	Dr. J. Sujathamalini, Professor & Head, Department of Special Education and Rehabilitation Science, Alagappa University (Education Campus), Karaikudi
Principal Investigator	Dr. K. Gunasekaran, Assistant Professor, Department of Special Education and Rehabilitation Science, Alagappa University (Education Campus), Karaikudi
Co-Principal Investigator	Dr. Rajesh Ramachandran (Alumnus), Mr. G. Ravichandran, R. Adaikalam (Ph. D Scholars), Mr. Tarak Halder, Madhuvanthi ELA, Department of Special Education and Rehabilitation Science, Alagappa University (Education Campus), Karaikudi

Objectives

To design and implement a Mobile based Adaptive Behavior cum Interpersonal Skill Training App for children with Autism Spectrum Disorder (ASD).

Summary of the work done

Developing a Mobile-Based Adaptive Behaviour cum Interpersonal Skill Training App for children with Autism Spectrum Disorder (ASD) is a meaningful and impactful initiative. As of the latest update, the first stage, which involved the review of related literature and the completion of the introduction part, has been accomplished. The next phase, referred to as "techno app processing," is currently ongoing. The principal investigators and co-investigators presented paper entitled Need for Mobile-Based Adaptive Behaviour cum Interpersonal Skill Training for Children with Autism Spectrum Disorder, National Conference on Psychological Interventions: - A Holistic Educational Approach for Diverse Learners - (PI-HEADL) in January 30th, 2024, organized by the Department of Special Education and Rehabilitation Science, Alagappa University. Web based Application was designed and the necessary inputs were done in the web page. The student credentials for login were created.

Status: Ongoing

Outcome of the project: The web application was designed and logo was created.

APP for Improving Interpersonal Skills in Autism Spectrum Disorder

Register

Email:

Password:

Confirm Password:

I accept the Terms of Use & Privacy Policy

[Register Now](#)

[Already have an account? Sign in](#)