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From the Editor's Desk

Once more, it is with immense pleasure that I was given the opportunity to work on the First Edition of the Department News Letter. As we all know, a newsletter mirrors a department-its vision and mission. It also highlights events, activities and academic prowess and achievements. In this edition, I have tried to capture last six month excitement and activities. I do hope that the newsletter encourages many more including students to use it as a platform to express their creativity. I sincerely hope that this edition makes for an interesting read. Please feel free to offer any suggestions for the improvement.

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June 2018

Dr. A. Arun, Associate Professor and Head (i/c) signed a MOU on 27.6.18 with National Centre of Excellence (MHRD) in Statistical and Mathematical Modelling on Bioresource Management, Thiagarajar College, Madurai sponsored by Ministry of Human Resource Development, Government of India

July 2018

Dr. A. Arun, Associate Professor and Head (i/c) published a paper: V.Ananthi, G.Siva Prakasha, K. Mohan Rasu, K. Gangadevi, T. Boobalan, Rathinam Raja, K.Anand, M.Sudhakar, Anil Chuturgoon, A. Arun. 2018. Comparison of integrated sustainable biodiesel and antibacterial nano silver production by microalgal and yeast isolates. Journal of Photochemistry and Photobiology B: Biology. (**IF 3.165**), ISSN: 1011-1344 (In online).

On 6/07/2018 essay writing contest on Swayam online programme was conducted in the Department of Microbiology on the topic **Zika virus** (by the Coordinator: Dr. T. Kavitha). All the second M.Sc., students were participated in this contest. The best three participants were selected for the reward. Best participants namely **D. Monica, P. Punithavalli and S. Andal** were given the 1st, 2nd and 3rd awards respectively by our honorable Vice Chancellor.

Students writing the essay contest at department of Microbiology.





Students' receiving prizes from our Honorable Vice chancellor

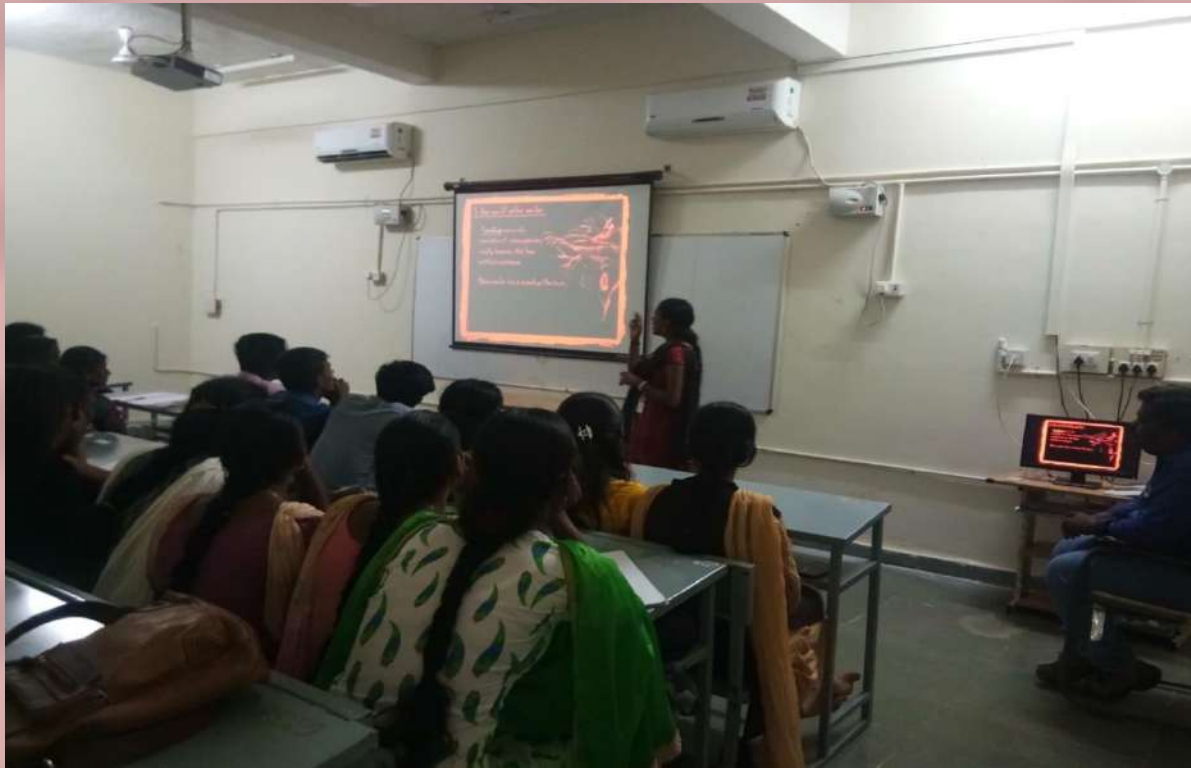




On the behalf of faculty members, research scholars and students of Department of Microbiology “**STUDENT SEMINAR CLUB**” (by the Coordinator: Dr. V. Balasubramanian) was conducted on 13.07.2018 in the topic of “**General Science Topics**”. Two PG students presented and highlighted the microbial products. PG Students and scholars were actively took part in the presentation and discussed in related to the topics. The detail of the presentation is follows,

S. No	Name	Topic
1.	T. Prasanna Raj	Transgenic Plants
2.	Manka Marycleopha	PCR
3.	M. Haridharshana	Virus





On the behalf of faculty members, research scholars and students of Department of Microbiology “CULTURAL CLUB” (by the Coordinator: Dr. T. Sathiamoorthi) was conducted on 27.07.2018. Welcome address was delivered by Mr. T.Prasanna Raj. Programmes include, mime, classical dance, mimicry, speech and poetry was performed by PG Students. Finally, vote of thanks was delivered by Ms. R.Elakkiyaruvi.



Classical Dance



Mime



Student Speech

August 2018

On the behalf of faculty members, research scholars and students of Department of Microbiology “JOURNAL CLUB” (by the Coordinator: Dr. A. Arun) was conducted on 3.8.18. Mr. T. Boobalan, presented his research findings in related to “Microbial power generation utilizing septic tank waste water”.



On behalf of Department of Microbiology, Journal club program was organized on 15.08.2018 in the themes of Microbiological research. Papers were presented in recent research advances in microbiology. All the Faculty members, Scholars and Students actively took part in this session. K. Vijay, Research Scholar presented the article entitled as **“Potential for plant biocontrol**

activity of isolated *Pseudomonas aeruginosa* and *Bacillus stratosphericus* strains against bacterial pathogens acting through both induced plant resistance and direct antagonism”.

He explained about the Broad spectrum antagonistic activity. Everyone was inspired by the research findings presented by research scholar.

Invited talk was organized by the Department of Microbiology of Alagappa University, Karaikudi, on 24.8.18 FN at the Science Campus. Dr. Sudhakar Muniyasamy, Senior researcher from Council for Scientific and Industrial Research (CSIR), Port Elizabeth, South Africa gave a talk on “Sustainable bio based polymers for green manufacturing sector”. He highlighted the importance of microbiology field in bioplastic production. Earlier, Dr. A. Arun, Associate Professor and Head (i/c), welcomed the gathering. Mrs. Dr. T. Kavitha, Assistant Professor, proposed vote of thanks.



On the behalf of faculty members, research scholars and students of Department of Microbiology “CULTURAL CLUB” (by the Coordinator: Dr. T. Sathiamoorthi) was conducted on 24.08.2018

AN. Welcome address was delivered Ms. M. Haridharshana. Programmes include, dance, mimicry, speech and poetry was performed by PG Students. Finally, vote of thanks was delivered by Mr. L.Madhan.

Cultural activity photos



Welcome Address



Western Dance



Singing



Poetry



Vote of Thanks

September 2018

On behalf of Department of Microbiology, Journal club program was organized on 19.09.2018 in the themes of Microbiological research. Papers were presented in recent research advances in microbiology. All the Faculty members, Scholars and Students actively took part in this session. G. Siva Prakash Research Scholar presented the article entitled as “**Nanoparticles in biomedical applications**”. He explained about the unique properties allow for their potential use in various biomedical applications. Everyone was inspired by the research findings presented by research scholar.

Report on Clean India Rally Programme - Ariyakudi





On 25.09.2018; time: 3.30 -5.00 PM

Organized by

Department of Biotechnology
Department of Bioinformatics
Department of Computer Science
Department of Microbiology
Department of Energy Science

Coordinators

Dr. T.Kavitha

Dr. S. Gowriskankar

Dr. J. Joseph Sahayarayan

Dr. S. Santhosh Kumar

Dr. Karthikeyan

‘Swachhata Hi Seva (SHS)’ – a movement of Swachh Bharat Mission (SBM), which is being observed by Alagappa University in order to pay due respect over the request made by the Union Government for the betterment of our Nation.

As a part of SHS, several activities are being carried out by involved Five Departments of Alagappa University under the coordinator ship of Prof. S. Thambidurai, Department of Industrial Chemistry, Alagappa University. One such important event called 'Clean India Rally' was organized by involving IInd year Post Graduate students from five Departments, (Department of Biotechnology, Department of Bioinformatics, Department of Computer Science, Department of Microbiology and Department of Energy Science) on 25.09.2018 (3.30-5.00 PM) at a village named 'Ariyakudi' located 5 kms away from the premises of Alagappa University.

The rally was started from the VAO office, Ariyakudi by 3.30 PM and ended at St. Micheal Matric. Hr. Sec. School by 5.00 PM, covering nearly 2 kms distance. The path of awareness rally was planned in such a way to meet nearly all the village people's residence door to door. Importantly, the rally crossed small streets of densely populated areas such as Car street, Perumal Temple street, Bharathi nagar, Ariyakudi Govt. Hr. Sec. School, Anbu nagar and St. Micheal Matric. Hr. Sec. School at the end. During the rally, students raised slogans related to Personal Hygiene, Green and Plastic free Environment and Planting Tree saplings for the restoration of Mother Earth's Wealth. Students also emphasized the importance of female illiteracy, child labour, conserving electricity, recycling plastics, anti-alcoholism, securing rain water, road safety rules, etc.

Department of Biotechnology





Department of Bioinformatics







Department of Computer Science





Department of Microbiology









Department of Energy Science





**PUBLIC AWARENESS RALLY EMPHASIZING THE IMPORTANCE OF
CLEANLINES AND GREEN ENVIRONMENT**

October 2018

On the behalf of faculty members, research scholars and students of Department of Microbiology “Women’s club” (by the Coordinator: Dr. T. Kavitha) was conducted on 9.10.18. Dr. T. Kavitha preside over the contest. Students and scholars were actively took part. The best three Mehendi designs were selected namely K.Gowsalya Devi (II.M.Sc Microbiology), H.Hajira Beevi, P.Priyanka(I M.Sc Microbiology)



Dr. A. Arun, Associate Professor and Head (i/c) received Dr. APJ Abdul Kalam Award for scientific excellence -2018 by Marina Labs, Chennai on 13.10.18

From 11th to 13th October 2018, 30 2nd M.Sc Microbiology students and faculty members of Department of Microbiology were actively involved in Village Extension Programme (VEP) at Pattamangalam village. The students and faculty members actively extended their service to Pattamangalam village. They involved in socio economic survey; rally to make awareness about cleanliness along with Thirumathi Valliyammai Achi High School (TRVA school) students; cleaning the guru temple premises; conducting sports competition for elementary school students and distribution of prizes; wall painting in government elementary school wall (about cleanliness); training on segregation of waste and waste into wealth.

Door to door awareness campaign



Rally to make awareness about cleanliness with thirumathi valliyammai achi high school (T.R.V.A school) students



Motivation talks to the 9th and 10th students



Cleaning the guru temple premises



Conducting sports competition for elementary school students and distribution of prizes





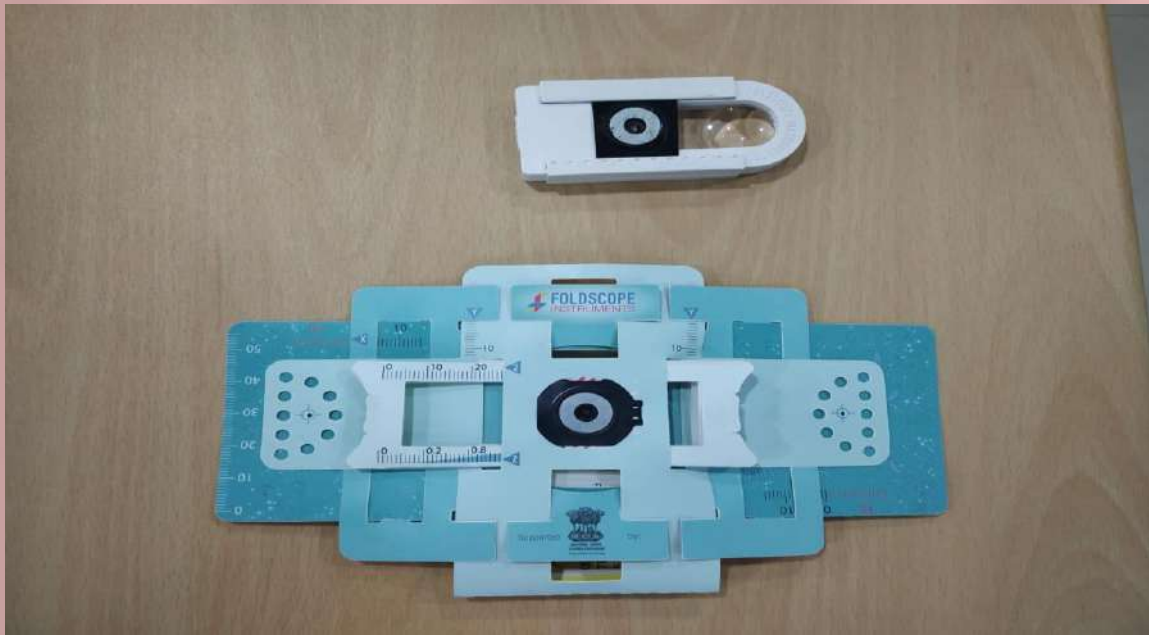
Wall painting in government elementary school wall (about cleanliness)





Invited talk was organized by the Department of Microbiology of Alagappa University, Karaikudi, on 15.10.18 FN at the Science Campus. Dr. Poonam Singh, Senior Scientist, Corrosion and material Protection Division, CSIR- Central Electrochemical Research Institute, Karaikudi, delivered lecture on Introduction and demonstration of fold scope. She emphasized the importance of foldscope for students. She explained the applications of foldscope, It is portable to sample collection area, occupies less space, low cost. Also demonstrated how to assemble the handy microscope. First Dr. T. Kavitha, Assistant Professor, introduced the chief guest and welcomed the gathering. Dr. T. Sathiamoorthi, Assistant Professor proposed vote of thanks.





On the eve of APJ Abdul Kalam Birth Anniversary school students from Karaikudi visited our lab on 15.10.18.



On behalf of Department of Microbiology, Journal club program was organized on 25.10.2018 in the themes of Microbiological research. Papers were presented in recent research advances in microbiology. All the Faculty members, Scholars and Students actively took part in this session. T. Boobalan Research Scholar presented the article entitled as **“Challenges in Microbial Fuel Cell and Future Scope”**. He explained about the basic principles involved in the working of MFCs and the key applications, challenges and future scope of MFC technology, as it stands today. Everyone was inspired by the research findings presented by research scholar.



November 2018

Dr. A. Arun, Associate Professor and Head (i/c) delivered an invited lecture at PG and Research Centre in Biotechnology, MGR College, Hosur on 10.11.18. Title: Pluggable clay cup MFC system in septic tank for electricity generation.

On behalf of Department of Microbiology, Journal club program was organized on 22.11.2018 in the themes of Microbiological research. Papers were presented in recent research advances in microbiology. All the Faculty members, Scholars and Students actively took part in this session. K. Mohan Rasu Research Scholar presented the article entitled as **“Poly(lactic acid)-based nanocomposites”**. He explained about the mass production techniques and property reinforcements (focusing on nanocomposites and plasticizers) for PLA-based plastics for commodity use. Everyone was inspired by the research findings presented by research scholar.

December 2018

On behalf of Department of Microbiology, Journal club program was organized on 13.12.2018 in the themes of Microbiological research. Papers were presented in recent research advances in microbiology. All the Faculty members, Scholars and Students actively took part in this session. R. Sathish Murugan Research Scholar presented the article entitled as **“Research perspectives**

on constraints, prospects and opportunities in biohydrogen production”. He explained about the biodegradable wastes, green wastes will be the mostly preferable targeted feedstock for hydrogen fermentation because of their large quantity and having simultaneous waste treatment benefit. G.H. Dinesh Research Scholar presented the article entitled as **“Improvement of biohydrogen production using acidogenic culture”**. He explained about the Maximum gaseous energy recovered using heat shock pretreated acidogenic culture. Everyone was inspired by the research findings presented by research scholar.

January 2019

Two-Day 2nd International Conference on “Recent Trends in Microbiology (RTM 2019)” sponsored by RUSA 2.0 and INSA was organized by the Department of Microbiology, Alagappa University, Karaikudi, on 24 Jan, 2019 at the Science Campus Seminar Hall.

Presiding over the function, Prof. N. Rajendran, Vice-Chancellor, Alagappa University said that useful knowledge has to be disseminated to the society through effective research and it should be done “not as a fashion but as a passion”. A certain inquisitiveness, a passion for innovation and a thirst for new knowledge are the hallmarks of a researcher. The outcome of all research should ultimately reach people and help industry. He asked the researchers in all disciplines to give importance to quality research rather than the quantity of publications to elevate the host institution and today the researchers have many opportunities as well. It is often said that India has not produced Nobel laureates after Sir. CV Raman. He asked the researchers of India to toil a lot with dedication to stamp their legs as Nobel laureates to get recognition for the country globally.





Dr. M. Sudhakar, Senior Scientist, CSIR-MSM Unit, Port Elizabeth, South Africa, in his inaugural address, said tons and tons of non-degradable plastics are under accumulation everyday which creates environmental hazards affecting the society through formation of micro plastics owing to partial chemical degradation that mix with soil and pollute water bodies. Research on Bioplastics to produce degradable plastics which are ecofriendly to the nature shall open up new applications and new avenues for plastic usage. Microbial production of bioplastics is a thrust area of research today that promises new applications and new avenues. In a thickly populated country like India the production of bioplastics has assumed greater relevance and significance, he added. He asked the students to deepen their knowledge and sharpen their skills so as to thrive well in personal life, professional life and societal life.

The conference abstract manual with ISBN: 978-93-88398-26-8 in digital format as CD was released by the Vice-Chancellor, and the first CD was received by the Chief Guest. Participants numbering around 150 from various Universities, Institutions across the country and a few delegates from abroad attended the inaugural ceremony.

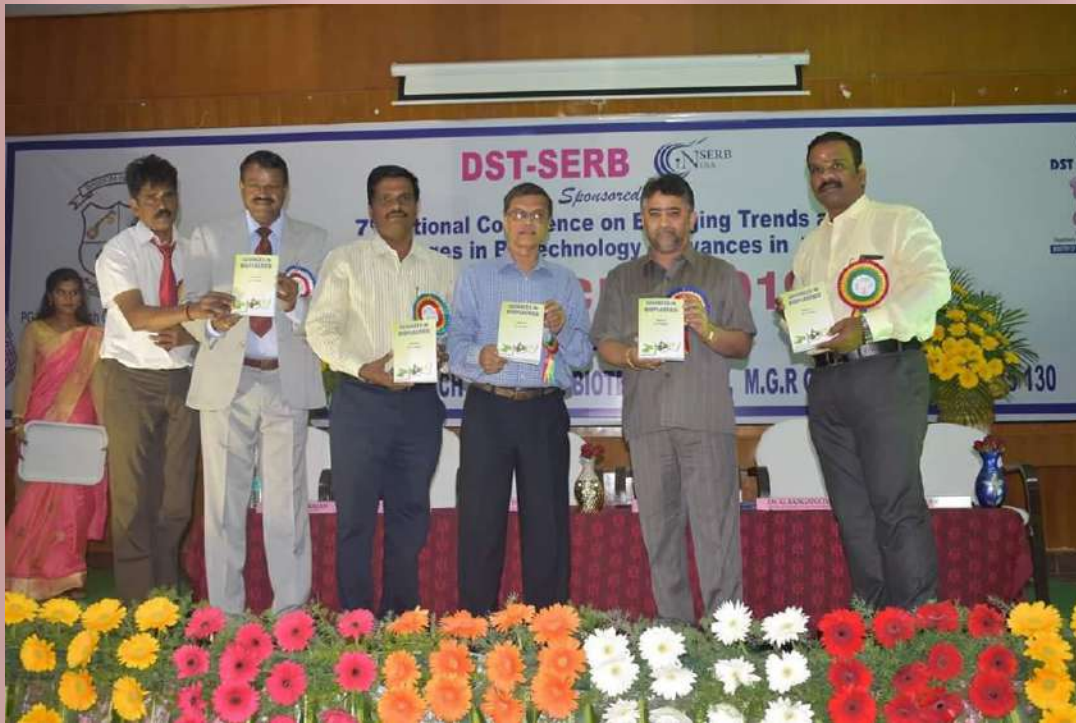


Members of the Syndicate, Faculty Members, Research Scholars and Students from various departments of Alagappa University were present on the occasion.

Dr. Arun, Convener and Head (i/c), Department of Microbiology, Alagappa University welcomed the gathering and presented the Thematic Address of the conference.

Dr. T. Kavitha, Organizing secretary, Department of Microbiology proposed a “vote of thanks”.

Dr. Arun, Associate Professor and Head (i/c), Department of Microbiology delivered key note address in DST Sponsored 7th National conference on Emerging Trends in New Challenges in Biotechnology: Advances in Bioplastics at Department of Biotechnology, MGR college, Hosur on 30.1.19.



Dr. Arun, Associate Professor and Head (i/c), Department of Microbiology Published a paper in SCI indexed journal: Rathinam Raja, Ana Coelho, Shanmugam Hemaiswarya, Parkavi Kumar, Isabel S Carvalho, **Arun Alagarsamy**.2018. Applications of microalgal paste and powder as

food and feed: An update using text mining tool, Beni-Suef University Journal of Basic and Applied Sciences, Vol. 7, Issue 4, 2018, P 740-747, ISSN 2314-8535, Elsevier publication.

Dr. Arun, Associate Professor and Head (i/c), delivered key note address in 7th National conference on Emerging Trends in New Challenges in Biotechnology: Advances in Bioplastics at Department of Biotechnology, MGR college, Hosur on 30.1.19

Dr. T. Kavitha, Assistant Professor delivered special lecture on Recent Research in Microbial Metabolism at Dr. Umamalya Ramanathan College for Women on 31st Jan, 2019

February 2019

Student project sanctioned by TNSCST, Project Title: Biohydrogen and bioplastic (PHB) production from dairy industry wastewater by phototrophic bacteria, Project code: ES-010, Rs 7500/-

Project granted for Rs 56,57,673/- RUSA 2.0 under Scheme For Promotion of Academic and Research Collaboration (SPARC) Proposal ID 485; project titled “Cost Effective, Modified Microbial Bioplastics [Poly Hydroxyl Butyrate (PHB) And Poly Lactic Acid (PLA)] as an Alternative for the Petroleum Derive Plastics”.– [Dr. A. Arun, Associate Professor and Head (i/c), Department of Microbiology, Alagappa University as the Principal Investigator from India, Dr. Kunyu Zhang, Associate Professor School of Chemical Engineering and Technology, Tianjin University as Principal Investigator and Dr. Pan Li & Dr. Yuesheng Li, Professors from Tianjin University, School of Materials Science and Engineering as the Co- Investigators].

On behalf of Department of Microbiology, Journal club program was organized on 22.02.2018 (Wednesday) in the themes of Microbiological research. Papers were presented in recent research advances in microbiology. All the Faculty members, Scholars and Students actively took part in this session. T. Suganya Devi Research Scholar presented the article entitled as “**Bacterial inhibition of fungal growth and pathogenicity**”. She explained about the antifungal activity of bacteria. Everyone was inspired by the research findings presented by research scholar.

March 2019

Dr. A. Arun, Associate Professor and Head (i/c) delivered an invited lecture at Department of Zoology, Holy Cross College, Trichy on 4.3.19. Title: Microbes in Bioplastic and energy production.

On behalf of Department of Microbiology, Journal club program was organized on 22.03.19 (Friday) in the themes of Microbiological research. Papers were presented in recent

research advances in microbiology. All the Faculty members, Scholars and Students actively took part in this session. Dr. T. Kavitha, Assistant Professor, presented the article entitled as **“Biofertilizer A way towards organic Agriculture: A Review & quote”**. She explained about the Mass production of biofertilizer, mode of action and potential role of biofertilizer in agriculture. Everyone was inspired by the research findings presented by faculty.

April 2019

International Conference on Bioplastics (BIOP-2019) Organised an International Conference on Bioplastics (BIOP-2019) was organized by the Department of Microbiology, Alagappa University, Karaikudi, on 2nd April, 2019 in the Conference Hall, at the Science Campus of Alagappa University.

Presiding over the function, Prof. N. Rajendran, Vice-Chancellor, Alagappa University, rightly pointed out that Alagappa University has now attained a significant place owing to academic excellence at the national level and the faculty must use this as a launching pad for creating benchmark in research. He added that "we should compare our work with the work of universities ranking high globally to move forward". To achieve this global recognition, he stated that 1) Commitment, 2) Passion and 3) Sacrifice are needed. The Vice- Chancellor pointed out that world's 4% annual oil production of fossil fuel is used as feedstock for production of plastics. This creates energy crisis and environmental problems. Bio-plastics is one of the possible solutions for the above said problems. Current trends focussed attention on production of bio-plastic from microorganisms by utilising renewable raw materials. Currently several polymers are synthesized from industrial waste by microbial fermentation.



The Department of Microbiology and Alagappa Institute of Skill Development in collaboration with CSIR, South Africa, have already initiated a collaborative setup for manufacturing bio-plastics production at a cost of Rs.1.83 crores at Alagappa University under RUSA 2.0 scheme.

Recently Dr.A.Arun, Associate Professor & Head i/c, Dept. of Microbiology of Alagappa University and Prof. Kunyu Zhang and his team members from Tianjin University from China received a fund of Rs.56.57 lakhs under SPARC by MHRD for production of cost effective modified bio-plastics as an alternative for petroleum based plastics. He added that Alagappa University would be signing MoUs with higher world ranking Universities including the Tianjin University, China.

The chief guest, Prof. Kunyu Zhang, Tianjin University, China, in his inaugural address informed that there is a lot of scope for more co-operation between the two departments and even between our two universities. Research on bio-plastics has broad scope and it would provide employment opportunities to the students. Another scholar from the same University Prof. Dr. Dong Po Song, in his felicitation, invited students, scholars and

Science Faculty members of Alagappa University to Tianjin University to have research collaboration for the betterment of both the institutions.

Participants from various universities, institutions across the country, Alagappa University Science Faculty Members, Research Scholars and Students from Science Departments were present at the inaugural function. Dr. A. Arun, Head of the Department (i/c.), Alagappa University, Convener and Organizing Secretary of the Conference welcomed the gathering earlier and presented the thematic address Dr. T. Kavitha, Assistant Professor, proposed a vote of thanks.

On behalf of Department of Microbiology, Journal club program was organized on 17.04.2019 in the themes of Microbiological research. Papers were presented in recent research advances in microbiology. All the Faculty members, Scholars and Students actively took part in this session. Dr. Sathiamoorthi, Assistant Professor, presented the article entitled as “Isolation of bacteriophage from environmental sample”. He explained about the method of isolation and benefits of bacteriophage and its application. Everyone was inspired by the research findings presented by faculty.

May 2019

Research Collaboration between Cornell and Alagappa University

Prof. Anthony G. Hay, Department of Microbiology, Cornell University, USA, visited Alagappa University, Karaikudi in connection with the initiatives taken by the Alagappa University under- RUSA phase 2.0 programme for the purpose of establishing research collaboration. During his visit Prof. Hay met Vice-Chancellor Prof. N. Rajendran of Alagappa University at his Chamber on 20.05.2019 and explained the possible areas of research collaboration between Cornell and Alagappa Universities.

The Vice-Chancellor briefed him about various modern facilities available for research at Alagappa University and stated that Alagappa University is the only State University that has been sanctioned hundred crores under RUSA- 2.0 scheme. He added that the University has been graded as category-1 University by the MHRD and recalled that Alagappa University had already signed a Memorandum of Agreement (MoA) with the

Cornell University on 19th March 2019 to promote research cooperation for advancement of scientific research and technological development.

The Vice-Chancellor further said that the MHR Govt. of India, has signed MoAs with 13 to US Universities to facilitate international academic exchange, to develop academic and scientific relationship and to encourage collaborative research activities. Cornell University, USA, is one among the 13 US Universities identified by the MHRD for research collaboration. Dr Hay of Cornell University is an expert who has extensively worked in the fields of Environment Toxicology, Microbiology and Soil-Crop Sciences. His projects mostly concentrate on pharmaceutical and personal care products like antimicrobial triclosan, Ibuprofen and the insect repellent DEET

Dr. Hay highlighted the facilities available for research at Cornell University in an interactive session with the various Heads of the Departments of Alagappa University. During his four-day stay (19.5.2019 to 22.5.2019) at Alagappa University he discussed research collaboration with the faculty at the Department of Bioinformatics, delivered distinguished lecture at the Science Faculty, and took part in the Broad Based Board of Studies (BBOS) of the Department of Bioinformatics.

With Dr. Anthony G. Hay, Prof. Sanjeev Kumar Singh of Alagappa University has been working in the area of Structural Bioinformatics on various targets of life threatening diseases and bacterial diseases. Prof. Singh's expertise on Structural Bioinformatics will help Dr. Hay to screen some compounds on the targets he has been focussing. Dr. Hay's expertise on biodegradation and biofilm formation will help Prof. Singh to validate and optimize the screened compounds in terms of activity and efficacy for curing life threatening diseases. The collaborative research is the bidirectional one and it would help to take the collaboration to the next phase of validation which would help in treating the diseases effectively.

Prof. H. Gurumallesh Prabu, Registrar, Prof. J. Jeyakanthan, Syndicate Member, Prof. K. Uthayasuriyan, Controller of Examinations, Prof. V. Balachandran, Finance Officer i/c, Prof. Sanjeev Kumar Singh, RUSA Coordinator and Heads of Departments of study were present on this occasion.