

Chem Frontier

Issue 1, 2020



Vision of the Department

Integral formation of the students with scientific skills and social responsibilities

Mission

To provide facilities for academic excellence, training in soft and professional skills and job placement.

To enable the students to become agents of social transformation by imparting skills in research.



Editor-in-Chief

Dr. S. Rayappan
Assistant Professor & Head

Editor

Dr. M. Amalraj
Assistant Professor



PG DEPARTMENT OF CHEMISTRY

Arul Anandar College (Autonomous)

(Reaccredited by NAAC at 'A' Grade with a CGPA of 3.66)

(DST-FIST Sponsored College)

(Affiliated to Madurai Kamaraj University)

Karumathur – 625 514, Madurai District.



From the Editor-in-Chief's Desk...

Greetings to all our Readers,

Arul Anandar College (Autonomous) is celebrating its *Golden Jubilee (1970-2020)* and the **Department of Chemistry** is celebrating its *Ruby Jubilee (1979-2019)*. During this twin Jubilation occasion, the Department of Chemistry is extremely happy to release the **First ever Issue of Chemistry Newsletter**. This newsletter highlights the activities of the students and the achievements of faculty during the academic year *2019-2020*. It provides a platform for exposing the merits and academic achievements of the faculties and students and also enhances the documentation culture of the Department.

It unleashes a wide spectrum of activities that were organized during the last academic year (2019-20) which was an eventful one on many grounds. We had an array of events like International Conference on Expanding Frontiers in Chemistry which was started in 2001 and has been continued till last year (**EFC-2019**). Intercollegiate competition **CHEMFEST-2K19**, Commemoration Day of Dmitri Mendeleev and National Science Day celebrations. Besides, the students participation in various events like Seminars, Conferences, Workshops, Intercollegiate competitions and other extracurricular activities has been highlighted. There's also an alumni section and in future newsletters we would like to include updates from our alumni as well.

I hope you will enjoy reading about what has been happening in the Department as much as we enjoy telling it to you. We are thankful to the faculty and students of the Department of Chemistry for their valuable inputs and special thanks to **Dr. M. Amalraj, Editor**, for his sincere efforts and larger contribution towards the release of this newsletter. We would appreciate your suggestions and feedback that will help us to improve further. We can be reached at chemistryaac@gmail.com.

Dr. S. Rayappan
(Editor-in-Chief)

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Milestones of the Department

- UGC Sponsored State and National Level Seminar on “Expanding Frontiers in Chemistry (EFC)” is conducted every year since 2001.
- Intra and Intercollegiate competitions “ChemFest” is conducted every year since 2006.
- **Department Alumni Association** was established in 2009.
- **Orientation for Fresher in Chemistry (OFC)** is organized from 2014.
- Dr. N. Savitha Devi received **DST Major Innovative Project** Rs.18,68,000 in 2014 under Fast Track Young Scientist and **Minor Project** Rs.2,65,000 from UGC.
- **Workshop on NET/SET/GATE (NSGC)** in Chemistry for PG students of our college as well as other colleges is conducted since 2015.
- Department was upgraded as **PG Department** in 2017.
- **First Fulltime Research scholar** registered for Ph.D under the Guidance of Dr. S. Martin in 2019.
- **First UGC Sponsored International Conference (EFC-19)** was conducted on 13th September 2019.
- **National Science day Celebration** is celebrated every year since 2018.
- **Mendeleev’s Memorial Day** is celebrated from 2020.
- **Releasing Newsletter since 2020**

History of the Department

| | |
|---|--|
| Name of the department and its year of establishment | Chemistry – 1979 |
| Programmes/ Courses Offered | PUC - 1971 B.Sc. Chemistry – 1979 M.Sc. Chemistry – 2017 COC – 2004 |
| Participation of the Department in the courses offered by other Departments | Non-major Elective courses for all UG courses Allied Chemistry Offered to B.Sc. Mathematics and B.Sc. Physics COC: Clinical Nutrition & Lab Technology |
| Total Number of Faculties | 11 (8 are Ph.D. holders & 5 are either NET/SET/GATE qualified and one is pursuing Ph.D.) |
| Department Projects Funded by DST-FIST; DBT, ICSSR etc. | Major - 1 (completed) Minor - 1 (completed) |
| Publications | International – 80 National – 9 |
| Presentations | International – 26 National – 47 |
| Infrastructural Facilities | Internet facilities for staff and students: Available Total number of class rooms : 5 Class rooms with ICT facility : 1 Laboratories : 2 Research Laboratory : 1 (DST) |
| Future Plan | Progressing towards Research Department |

Best Practices of the Department

- Orientation Program for Fresher (Both UG and PG separately)
- Conducting NET/SET/GATE/JAM coaching classes
- Remedial classes for slow learners
- Industrial visit for final year UG and PG students
- Organizing invited lectures by the subject and research experts
- Celebrating National Science Day
- Conducting Expanding Frontiers in Chemistry EFC- National and International Seminar since 2001
- Conducting intercollegiate and intracollegiate competitions
- Faculty get together
- Open Students feedback – About Teachers
- Mendeleev’s Birth Day Celebration
- Conducting Eye Camp – Arise
- Conducting Medical Camp
- Cycle Rally – Dengue Fever Awareness
- Steering Pongal Celebration – With Village people
- Encouraging the students to participate in National and International seminars and also intercollegiate competitions
- Conducting meeting for the Alumni

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List of Faculty working at the Department

| S.No | Name of the Faculty | Designation | Qualification | Joining |
|------|-----------------------------|----------------------------|--|---------|
| 1 | Dr. S. Rayappan | Assistant Professor & Head | M.Sc., M.Phil., Ph.D., | 2004 |
| 2 | Rev. Dr. John Pragasam S.J. | Associate Professor (Rtd) | M.Sc., Ph.D. (USA) | 2017 |
| 3 | Dr. N. Savitha Devi | Assistant Professor | M.Sc., Ph.D., | 2012 |
| 4 | Mr. S. A. Deva Prince | Assistant Professor | M.Sc., M.Sc. (Psy)., M.Ed., M.Phil. (Edu)., NET, GATE | 2013 |
| 5 | Dr. S. Martin | Assistant Professor | M.Sc., M.Phil., Ph.D., SET | 2014 |
| 6 | Dr. M. Amalraj | Assistant Professor | M.Sc., Ph.D., NET, GATE | 2019 |
| 7 | Mr. K. Ganesan | Assistant Professor (SF) | M.Sc., M.Phil. | 2016 |
| 8 | Dr. M. Easuraja | Assistant Professor (SF) | M.Sc., M.Phil., Ph.D. | 2017 |
| 9 | Dr. K. Jansi Rani | Assistant Professor (SF) | M.Sc., M.Phil., Ph.D., SET | 2017 |
| 10 | Dr. A. John Jeevagan | Assistant Professor (SF) | M.Sc., Ph.D. | 2017 |
| 11 | Mr. M. Murugapandi | Assistant Professor (SF) | M.Sc., M.Phil., B.Ed.,SET., NET., GATE | 2018 |

Faculty as Resource Persons to Other Institutes

Chemistry faculty extend their service as like BOS members and Question paper setters for other colleges.

- **Dr. S. Rayappan** was invited as a **Board of Studies member** at Saraswathi Narayanan College, Madurai in November 2019. He was also setting question paper to Holy cross College Nagercoil, Gobi Arts & Science College, Gobichettipalayam, The American College, Madurai, GTN Arts & Science College, Dindigul, Thanthai Hans Roever College, Perambalur and Nallamuthu Gounder Mahalingam College, Pollachi. He was also invited as an **External Examiner** for the semester practical examination to Fatima College and Saraswathi Narayanan College, Madurai.
- **Dr. N. Savitha Devi** has applied to Madurai Kamaraj University, Madurai for recognizing her as Research Supervisor. She was setting question papers to C.Abdul Hakeem College, Melvisaram.
- **Mr. S. A. Deva Prince** was setting question papers to Jayaraj Annapackiam College, Periyakulam.
- **Mr. S. A. Deva Prince**, Assistant Professor delivered two guest lectures on the topics “*Structural Predictions of Simple Polyatomic Molecules using VSEPR Theory*” and “*Organic Nitrogen Compounds*” for the +2 school students in the Association Meeting held in Pathirakaliamman Matriculation Higher Secondary School, Palamedu, Madurai on 18-02-2020.
- **Dr. M. Amalraj** was setting question papers to Madras Christian College, Tambaram.
- **Dr. M. Easuraja** was setting question papers to Jayaraj Annapackiam College, Periyakulam.

Participation / Paper Presentation in Conferences/ Workshops/ Seminars

- **Mr. K. Ganesan** presented a paper entitled “*Ailanthus excelsa leaves extracts as sustainable corrosion inhibitor of mild steel in sulphuric acid medium*” in the International Conference on ‘Expanding Frontiers in Chemistry 2019 on 13-09-19 conducted by Arul Anandar College, Karumathur, Madurai.
- **Dr. A. John Jeevagan** presented a paper entitled “*Facile Synthesis of Visible Light Driven Tin Oxide (Sn₃O₄) Supported Bimetallic Nanoparticles and its Photocatalytic Activity*” in the National conference on ‘Emerging Trends in Chemistry and Energy Science’ conducted by Saraswathi Narayanan College, Madurai on 07-02-20.
- **Dr. M. Amalraj** attended a workshop on Recent Trends in Electrochemistry for Societal Applications conducted by Loyola College, Chennai on 31-01-2020.
- **Dr. M. Amalraj** also presented a paper entitled “*Preparation of Ni(OH)₂/Carbon Nanohybrids by Hydrothermal Carbonization Process for the Electrocatalytic Applications in Oxygen Evolution Reaction*” conducted by Saraswathi Narayanan College, Madurai on 07-02-2020.

Research Publications

- **Dr. S. Rayappan**, published a paper entitled, “A facile novel synthesis of $\text{ThO}_2/\text{Fe}_3\text{O}_4$ nanocomposite with enhanced photocatalytic activity for the degradation of malachite green under visible light irradiation” in the **International Journal of Pharmaceutical Science and Research** 10 (2019) 2902.
- He also published “Clinically Pertinent Manganese Oxide/Polyoxytyramine/ Reduced Graphene Oxide Nanocomposite for Voltammetric Detection of Salivary and Urinary Arsenic” in the **Journal of Cluster Science**, 2019 (DOI: 10.1007/s10876-019-01696-4).
- He also published “Picomolar-level electrochemical detection of thiocyanate in the saliva samples of smokers and non-smokers of tobacco using carbon dots doped Fe_3O_4 nanocomposite embedded on g- C_3N_4 nanosheets” in **Electrochimica Acta** 283 (2018) 914 with an impact factor of 5.383.
- **Dr. N. Savitha Devi** published a paper entitled, “Catalyst free Synthesis of Highly Functionalized Indolizines from In Situ Generated Pyridinium Ylides via One-Pot Multicomponent Reaction” in **Chemistry Select** 4 (2019) 3717 with an impact factor of 1.811.
- **Dr. M. Amalraj** published a paper entitled “Biocompatible supercapacitor electrodes using green synthesised ZnO/Polymer nanocomposites for efficient energy storage applications” in the **Journal of Energy Storage** 28, (2020) 101275 (DOI: 10.1016/j.est.2020.101275) with an impact factor of 3.517.

Contribution of the Retired Professors

1. **Dr. D. Thenraja, Former Head of Chemistry** visited the department and motivated I PG students in the orientation program conducted on 25 June 2019. He also visited the college and acted as *Jury in Chem Turncoat* event in ChemFest 2K19 on 18-12-2019.
2. **Dr. S. Arockiadoss, Former Professor of Chemistry** visited the college on 21-11-2019 and donated about 100 chemistry books to the Department of Chemistry.

Dr. M. Sankaranarayana Pillai Endowment Scholarship

Established in 2016 by **Mr. S. A. Deva Prince**, Assistant Professor of Chemistry, Arul Anandar College in honour of his Professor – to be awarded preferably to two deserving B.Sc. Chemistry students from the interest accruing from **Rs. 25000/-**. This has been enhanced to **Rs. 50000/-** by **Mr. S. A. Deva Prince** in this academic year 2019-2020.

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IJPSR (2019), Volume 10, Issue 6 (Research Article)

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

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A FACILE NOVEL SYNTHESIS OF $\text{ThO}_2/\text{Fe}_3\text{O}_4$ NANOCOMPOSITE WITH ENHANCED PHOTOCATALYTIC ACTIVITY FOR THE DEGRADATION OF MALACHITE GREEN UNDER VISIBLE LIGHT IRRADIATION

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Journal of Cluster Science
https://doi.org/10.1007/s10876-019-01696-4

ORIGINAL PAPER

Clinically Pertinent Manganese Oxide/Polyoxytyramine/Reduced Graphene Oxide Nanocomposite for Voltammetric Detection of Salivary and Urinary Arsenic

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Electrochimica Acta 283 (2018) 914–921

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Electrochimica Acta
journal homepage: www.elsevier.com/locate/electacta

Picomolar-level electrochemical detection of thiocyanate in the saliva samples of smokers and non-smokers of tobacco using carbon dots doped Fe_3O_4 nanocomposite embedded on g- C_3N_4 nanosheets

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ChemPubSoc Europe DOI: 10.1002/slct.201900665

Chemistry SELECT Full Papers

Organic & Supramolecular Chemistry

Catalyst free Synthesis of Highly Functionalized Indolizines from In Situ Generated Pyridinium Ylides via One-Pot Multicomponent Reaction

Vediyappan Ramesh,^[a] Natarajan Savitha Devi,^[b] Marappan Velusamy,^[c] and Sivakumar Shanmugam^[a]

Journal of Energy Storage 28 (2020) 101275

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Biocompatible supercapacitor electrodes using green synthesised ZnO/Polymer nanocomposites for efficient energy storage applications

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Activities of the Department of Chemistry during the Academic Year 2019-2020

1. Welcome get together

A welcome get together was arranged to welcome the new Rector **Rev. Dr. John Pragasam S.J.** and the new faculty **Dr. M. Amalraj** at Royal Court, Madurai to welcome them.



2. Orientation Program for I UG

Orientation Program for I UG students was conducted in the Department of Chemistry on 25 and 26 June, 2019. **Dr. S. Rayappan**, Assistant Professor & Head, PG Department of Chemistry, welcomed the dignitaries and the fresher.

Rev. Dr. John Pragasam S.J. Rector, AAC delivered the inaugural address. Entry level test was conducted for the fresher. Motivational sessions, lab safety instructions, fun chemistry, various opportunities in chemistry, scope in pursuing higher studies, and various competitive exams in chemistry were conducted.



3. Orientation Program for I PG

Orientation program for I PG students was conducted in the Department on 15 & 16th July 2019 for the fresher. **Dr. S. Rayappan**, Assistant Professor & Head welcomed all the PG students. **Dr. D. Thenraja**, Former Head and Retired Professor of Chemistry motivated the PG freshers. Motivational sessions and general guidelines to approach competitive exams like NET and GATE were given to the students. **Mr. S. A. Deva Prince**, **Dr. M. Amalraj** and **Dr. K. Jansi Rani** highlighted the significance of Inorganic Chemistry, Physical Chemistry and Organic Chemistry to approach the competitive exams, respectively.



4. Welcome Party

Fresher day celebration was organized in the department of Chemistry to welcome I UG and I PG students organized by II & III B.Sc. and II PG students. **Dr. S. Rayappan**, Assistant Professor & Head welcomed the students. Various events were organized by the students. To spread green, tree saplings were given to the fresher students. **Dr. N. Savitha Devi** was the convener of the meeting.



5. International Conference on Expanding Frontiers in Chemistry-2019 (EFC 2019)



The Department of Chemistry was started in 1979 and since then it has grown into an active department of Arul Anandar College. As part of the celebration of Golden Jubilee for Arul Anandar College and Ruby Jubilee for Chemistry department, the department organized a one-day UGC sponsored *International Seminar on Expanding Frontiers in Chemistry-19* on 13th September, 2019 at Arul Anandar College, Karumathur. Around 80 participants including national and international participants, research guides, research scholars and post-graduate students had registered for the seminar. Dr. S. Rayappan, Convener, welcomed the gatherings. **Prof. Dr. K. Pitchumani** released the proceedings of the conference (ISBN number: 978-93-86712-89-9). **Prof. Dr. K. Pitchumani**, Vice Chancellor, Manonmaniam Sundaranar University, Professor. **Dr. T. Mohan Das**, Department of Chemistry, Central University of Thiruvavur, Tamilnadu and Professor **Dr. M. Saravanan**, College of Health Science, Mekelle University, Ethiopia were invited as key-note speakers. 59 researchers presented their research work in oral and poster presentations. Miss. S. Priyadarshini, University of Malaya, Kuala Lumpur - 50603, Malaysia presented her paper through Skype. The organizing secretary, **Dr. S. Martin**, Organizing Secretary formally thanked all.

6. Association Activities of the Departments

Invited Lectures in Chemistry

IL1: Chemistry association was inaugurated on 16-9-2019 and **Dr. Prabhu**, Assistant Professor, Nallamuthu Gounder Mahalingam College, Pollachi gave a lecture on “*Introduction to Natural Products*”.

IL2: Invited International Lecture on “*Modern Drugs*” in commemorate the birth anniversary of **Dmitri Mendeleev (Father of Modern Periodic Table)** was organized on 10th February, 2020. **Dr. Manoharan Ramasamy**, Global Head, Process Analytics Center of Excellence, Global Pharmaceutical Operations, Merck and Companies, West Poing, PA-19486- an illustrious alumini of Arul Anandar College (*First B.Sc. Batch, 1982*) delivered a lecture on Modern Drugs.

IL3: To celebrate **National Science Day**- 28 February 2020 and also to celebrate the valedictory function of Chemistry Association, an invited lecture was arranged on 28th February 2020. **Dr. M. Rajendran**, Associate Professor and Head, Department of Chemistry, SVN College, Madurai delivered a lecture on “*Computation Quantum Chemistry*”.



7. Department Level – Alumni Meet

Alumni meet was conducted in the Department on 12-10-2019. More than 30 alumni participated in the alumni meet. **Dr. S. Rayappan**, Assistant Professor & Head, welcomed the alumni and **Rev. Dr. S. Basil Xavier**, Principal delivered the presidential address. A video of Memory Lane was played which contained the collection of photos of alumni. Many alumni shared their memory and also gave suggestions for the growth of the Department. **Dr. S. Martin** and **Mr. K. Ganesan**, were the organizers.



Mr. M. Anna Pushpa Raja, Alumni (2002-05), Senior Chemistry, UAE contributed **Rs. 25000/-** to the Department of Chemistry for helping poor students in paying their fees. 4 students got benefited out of the contribution.

Mr. P. Pandidurai, Alumni (2000-03), MD, Sivasakthi Garments, Tirupur has contributed **Rs. 10,000/-** to Department for conducting Intercollegiate competition ChemFest 2K19.

Mr. L. Antony, Alumni (2000-03), Pharmacist, Karumathur has contributed **Rs. 5000/-** to the Department for helping poor students in paying the fees.

8. Intercollegiate Competition- ChemFest 2K19

PG Department of Chemistry, Arul Anandar College organized an intercollegiate competitions **CHEMFEST-2K19** on 19th December, 2019, to mark the Golden Jubilee celebrations of Arul Anandar College and Ruby Jubilee celebration of the Department of Chemistry. 26 colleges from all over Tamil Nadu registered for CHEMFEST 2K19. A total of 312 students along with 17 accompanying professors attended CHEMFEST 2K19. Competitions like *Chem Turncoat*, *Chem quiz (UG and PG)*, *Chem Rangoli*, *Chem Meme*, *Chem Presentation*, *Chem Ad-Act* and *Mr/Miss Chemist* were conducted. Mr. Logesh from Ayya Nadar Janaki Ammal College, Sivakasi won the Mister Chemist title. Among 24 colleges, Ayya Nadar Janaki Ammal College, Sivakasi, won the overall championship by winning many prizes in various competitions. **Dr. S. Rayappan** (Convener), **Mr. S. A. Deva Prince** (Organizing Secretary) and **Dr. M. Amalraj** (Coordinator) along with the support of other faculty conducted the events successfully.



**அருளானந்தர் கல்லூரி
வேதியியல் விழா**

செக்கானூரணி, டி.ச.22 - உள்எட்ட 8 வகையான
கருமாத்துார் அருள் போட்டிகள் நடத்தப்
ஆனந்தர் கல்லூரி பொன் பட்டன. சிவகாசி அய்ய
விழா கொண்டாட்டம் மற் நாடார் ஜானகியம்மாள்
றும் வேதியியல் துறையின் கல்லூரி சாம்பியன்
40ம் ஆண்டு நிறைவு விழா சோப்பை வென்றது. உதவி
நடந்தது. பேராசிரியர் அமல்ராஜ்
துறைத்தலைவர் ராயப் நன்றி கூறினார்.
பன் வரவேற்றார். கல்லூரி
அதிபர் ஜான் பிரகாசம், அரைஸ் விரிவாக்கத்
செயலர் மணிவான், துறை சார்பில் மழைக்கால
அமைப்பு செயலர் தேவபி தொற்று நேரம் விழிப்பு
ரின்ஸ், இணை முதல்வர் ணர்வு சைக்கிள் ஊர்வலம்
மைக்கேல் ஜான் பீட்டர், நடந்தது. தமிழ்த்துறை
விருதுநகர் வி.எச்.என்.எஸ். பேராசிரியர் விஜய் வர
என்., கல்லூரி பேராசிரியர் வேற்றார். செல்லம்பட்டி
முத்துராஜ் பங்கேற்றனர். ஆரம்ப சுகாதார மைய
மாணவர்களுக்கு மருத்துவ அலுவலர்
வினாடி வினா, கோலம், ஆனந்தஜோதி உள்ளிட்
வேதியியல் மீம்ஸ் டோர் பங்கேற்றனர்.

9. Student Activities and Pongal Celebration

To develop the communication skills of students, students were encouraged to participate in **SPEAKPARK**. 13 students participated in that. The students were encouraged to participate in seminars and competitions conducted by other colleges and they won prizes from various colleges. Students participated and won many prizes in the intra-college competitions conducted by Arul Anandar College. The department actively participated in the *Pongal Celebration* arranged by the college. Students actively participated in various competitions and won II prize in cycle tyre running competition by **Ms. P. Pandeeswari**, **Ms. M. Subalakshmi**, **Ms. K. Aasha** and **Ms. S. Merlin** and I prize in Balloon Bursting by **Ms. P. Pandeeswari**. **Mr. K. Ganesan** coordinated the students along with department faculty and Pongal was celebrated in grand manner.



10. Intercollegiate competitions

SFR College, Sivakasi

Mr. S. Denisdon, I M.Sc. student won **I prize** in *Chem Meme* in the intercollegiate competitions conducted at SFR College, Sivakasi on 28th January, 2020. **Dr. M. Amalraj**, Assistant Professor, accompanied and encouraged the team of students who participated in the intercollegiate competitions.

Jayaraj Annapackiam College, Periyakulam

Mr. A. Antony Samy from III B.Sc. won the **II prize** in *Chem Quick* in the intercollegiate competitions conducted by Jayaraj Annapackiam College, Periyakulam on 9-1-2020.

The American College, Madurai

Ms. S. Snega from II B.Sc. won the **II prize** in the paper presentation competition for presenting 'High Energy Batteries' at The American College, Madurai. **Mr. S. Ashraf**, **Mr. S. Edison**, **Mr. M. Anish** from III B.Sc. and **Mr. M. Gokula Krishnan** and **Mr. A. Tokophilus** from I B.Sc. participated in *Chem Ad-Act* held at The American College, Madurai and won **I prize**. **Mr. K. Ganesan**, Assistant Professor accompanied and encouraged the team of students who participated in the intercollegiate competitions.



Parvathy's College of Arts and Science, Dindigul

Students from the Department of Chemistry participated in the intercollegiate competitions conducted by Parvathy's Arts and Science College, Dindigul on 14-02-2020. **Ms. S. Snega** from II B.Sc. won the **II prize** in the *paper presentation* entitled 'Materials Chemistry'. **Mr. S. Ashraf**, **Mr. S. Edison**, **Mr. M. Anish** from III B.Sc. and **Mr. M. Gokula Krishnan** and **Mr. S. Mohith Vikash** from I B.Sc. won **I prize** as a team in the *Chem AdAct*. **Mr. Sathish** from I B.Sc. won the **III prize** in *Chemart*. **Mr. A. Antony Samy** from III B.Sc. won the **II prize** in *Chemspeed* competition. **Ms. M. Sri Aruthra** and **Ms. K. Jansidevi** won the **II prize** in *Chem modelling*. **Dr. S. Martin**, Assistant Professor accompanied and encouraged the team of students who participated in the intercollegiate competition. Out of 26 colleges, students of Arul Anandar College won the **OVERALL CHAMPIONSHIP** trophy at the intercollegiate competitions held at Parvathy's College of Arts and Science.

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Gandhigram Rural Institute, Dindigul

Students of Chemistry actively participated in the intercollegiate competition RESONANCE-2k20 conducted by Gandhigram Rural Institute, Dindigul. **Ms. S. Sneha** from II B.Sc. won the **II prize** in the *paper presentation* for presenting “Sustainable Materials for Energy Applications”. **Mr. S. Ashraf**, **Mr. S. Edison**, **Mr. M. Anish** from III B.Sc. and **Mr. M. Gokula Krishnan** and **Mr. A. Tokophilus** from I B.Sc. participated in *Chem Ad-Venture* and won **I prize**. **Mr. M. Murugapandi**, Assistant Professor accompanied and encouraged the students.

Kalasalingam University, Krishnankovil

Students of Chemistry participated in the intercollegiate competitions conducted by Kalasalingam University, Krishnankovil on 22-02-2020. **Mr. S. Ashraf**, **Mr. M. Anish**, **Mr. S. Edison** from III B.Sc. and **Mr. M. Gokulakrishnan** and **Mr. A. Tokophilus** from I B.Sc. won the **II prize** in *Chem Adact*. **Mr. A. Antony Samy** from III B.Sc. Chemistry won the **III prize** in *Chemclicks*. **Mr. P. Nagarajan**, **Mr. P. Pawel**, **Mr. P. Kabilan** and **Mr. K. Marimuthu** won **I prize** in *Chemconnection*. **Mr. K. Marimuthu** from III B.Sc. won **I prize** in *fun chemistry*. **Dr. M. Amalraj**, Assistant Professor accompanied and encouraged the students.

A team of students won the **Hat-Trick I prize** in *Chem Ad-Act* conducted at The American College, Parvathy's College of Arts and Science and Gandhigram Rural Institute and **Ms. S. Sneha**, II B.Sc. won **Hat-Trick II prize** in *Chem Presentation* at The American College, Parvathy's College of Arts and Science and Gandhigram Rural Institute.

11. Seminars and Workshop attended by Students

Mr. P. Pawel and **Mr. A. Anandaraj** (II M.Sc.) attended a workshop on chemistry conducted by Lady Doak College, Madurai on 13-12-2019.

Mr. R. Rahul, **Mr. S. Denisdon** and **Ms. A. Ashwin Felicita** (I M.Sc.) and **Dr. M. Amalraj** attended the workshop on “*Recent Trends in Electrochemistry for Societal Applications*”, conducted by Loyola College, Chennai on 31-1-2020.

Mr. S. Jeyaraj, **Ms. M. Kavitha** (II M.Sc.) and **Dr. A. John Jeevagan** presented a paper on “*Facile Synthesis of Visible Light Driven Tin Oxide (Sn₃O₄) Supported Bimetallic Nanoparticles and its Photocatalytic Activity*” in the International Conference on ‘*Emerging Trends in Chemistry and Energy Science*’ at Saraswathi Narayanan College, Madurai on 7-2-2020.

Mr. A. Anandaraj (II M.Sc.) and **Dr. M. Amalraj** presented a paper on “*Preparation of Ni(OH)₂/Carbon Nanohybrids by Hydrothermal Carbonization Process for the Electrocatalytic Applications in Oxygen Evolution Reaction*” in the International Conference on ‘*Emerging Trends in Chemistry and Energy Science*’ at Saraswathi Narayanan College, Madurai on 7-2-2020.

Mr. S. Jeyaraj and **Mr. A. Anandaraj** (II M.Sc.) attended *National ‘Seminar on Recent Trends in Chemistry’* conducted by the Department of Chemistry, Fathima College, Madurai.

Mr. S. Jeyaraj, **Ms. M. Kavitha** (II M.Sc.) and **Dr. A. John Jeevagan** presented a paper on “*Facile Synthesis of Visible Light Driven Tin Oxide (Sn₃O₄) supported Pd-Au Alloy Nanoparticle*” in the National Conference on ‘*Energy Science and Technology*’, organized by Periyar University, Salem.

International Seminar on Emerging Trends in Chemistry and Energy Science
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PREPARATION OF Ni(OH)₂/CARBON NANOHYBRIDS BY HYDROTHERMAL CARBONIZATION PROCESS FOR THE ELECTROCATALYTIC APPLICATIONS IN OXYGEN EVOLUTION REACTION

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Abstract

Water splitting through electrolysis and photocatalysis has attracted huge attention, as hydrogen is a highly desirable energy carrier for future clean and renewable energy supply. The biggest challenge in seeking highly efficient catalysts for water electrolysis is to reduce the amount of noble metal used as electrocatalyst or to replace them with inexpensive materials. Herein, Ni(OH)₂/carbon nanohybrids will be used as an electrocatalyst for oxygen evolution reaction (OER). The nanohybrids were prepared by

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FACILE SYNTHESIS OF VISIBLE LIGHT DRIVEN TIN OXIDE (Sn₃O₄) SUPPORTED BIMETALLIC NANOPARTICLES AND ITS PHOTOCATALYTIC ACTIVITY

Sonai Jeyaraj, Mariyappan Kavitha and Arockiam John Jeevagan*

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Abstract

Photocatalytic generation of hydrogen has been paying attention to solve the energy and environmental problems. Generally, the photocatalyzed hydrogen production inherently proceeds via two charge processes, such as (a) the trapping of photo-generated electrons and holes on surface active sites of semiconductors, and (b) the interfacial transfer of electrons and holes from active sites to reacting substrates. In recent times, the metal/semiconductor and semiconductor/semiconductor composite materials are used to

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“College of Excellence”
Chennai - 600034
Department of Chemistry

Certificate of Participation

This is to certify that Prof. Dr. Mr. Ms. RAJUL of
ARUL ANANDAR COLLEGE participated in one day workshop on
“Recent Trends in Electrochemistry for Societal Applications” organized by the
Department of Chemistry, Loyola College, Chennai, Tamil Nadu on 31st January 2020.

Dr. M. Gokulakrishnan
Convener
Head, Department of Chemistry
Loyola College

Rev. Dr. A. Thomas S.J.
Principal
Loyola College

Dr. J. Judith Vijaya
Organizing Secretary
Assistant Professor
Loyola College

12. Cultural and Sports activities of students

Sports activities

On sports day, our students participated in March past and won III Prize.

Dr. A. John Jeevagan, Cultural and Sports in-charge of our department encouraged the students and received the cash prize of **Rs. 2500/-** for winning the March past event.

Mr. A. Antony Samy (III B.Sc.) won II prize in 2000 meter running competition in the sports day competition. During Interdepartmental Sports meet conducted by our college, our students won the *runner up* in *Kho Kho* event.



Cultural Activities

Saral: Department level tamil skit competition was organized by Tamil department on September 28, 2019: Our students, **S. Snega**, **R. Naveena**, **A. Karthick**, **S. Samson**, **P. Nikkitha**, **K. Aasha**, **A. Anitha**, **S. Deepak Manikandan** and **P. Nagarajan** actively participated in tamil skit with a theme "*Prevention of Environment*".

Theatre Fest: Department level English skit competition was arranged by English department on 15-02-2020. Our students **R. Rahul**, **R. Muthulakshmi**, **S. Sweety**, **P. Ajitha**, **R. Reena**, **M. Monisha**, **P. Nikkitha**, **A. Abitha** and **P. Kabilan** actively participated in English skit. **Dr. A. John Jeevagan**, Assistant Professor coordinated and trained the students for Saral Tamil skit and English skit.

As part of the celebration of Golden Jubilee, college has conducted speech competition. Our student **Mr. P. Kabilan** from I B.Sc. won *III prize* in the speech competition and spoke about *AAC-The Light House for Rural Students*.

Camp Fest 2k20-Department level competition

Department level competitions **Camp Fest 2k20** was arranged by our college. Our students won number of prizes in the events. **Mr. Antony Samy** won the *I prize* in *Photography competition*. **Mr. S. Ashraf** from III B.Sc. won the *III prize* in *Talent Show*. **Ms. A. Kavitha** and **Ms. P. Pandeewari** participated in *face painting* and won *III prize*. **Mr. Anish** from III B.Sc. won the *III prize* in *Start with Rs. 50 event*. Besides our students won the first prize in the on stage events such as *Folk dance* and *Ad Mad* and participated in the on stage event *Fusion dance*.

Dr. A. John Jeevagan, Assistant Professor, encouraged the students for participating and winning prizes in Camp Fest 2k20.



**Photograph of
Mr. A. Antony Samy
that won I prize in Campfest- 2K20**

13. Other activities

Board of Studies Meeting

BoS meeting was conducted for the revision of syllabi for III B.Sc. under CBCS pattern and II B.Sc. under OBE pattern on 09-01-2020. Chair person **Dr. S. Rayappan**, Assistant Professor & Head invited the external members and the faculty of the department. **Dr. V. Padmini**, (University Nominee), MKU, **Dr. A. Gubendran**, SN College, **Dr. P. Prakash**, Thiagarajar College and **Mr. B. Servaramuthu**, Vivekananda College came as external experts and gave valuable inputs.

Besides, Department faculty meeting were held on 15-06-19, 15-07-19, 08-08-19, 17-12-19, 27-02-20 and 09-03-20 to plan various academic events in the academic year 2019-20.

NET/GATE/JAM Coaching

For the benefit of our students, NET/GATE/JAM coaching classes were conducted by **Mr. S. A. Deva Prince** and **Dr. M. Amalraj** from 2-4 p.m. on every Tuesday, Wednesday and Thursday. Students from III B.Sc. and PG students attended and got benefited out of the classes.

Contribution of Faculty to Students

Besides, **Dr. S. Rayappan** and **Mr. S. A. Deva Prince** helped the students in paying their semester and exam fees.



14. Industrial Visit

Department of Chemistry, Arul Anandar College arranged three days industrial visit on March 9-12, 2020. 56 students along with **Dr. S. Rayappan** and **Mr. S. A. Deva Prince** visited **Karnataka Soaps and Detergent Limited**, Bengaluru, **Central Food Technological Research Institute (CFTRI)**, Mysuru and **Visvesvaraya Science Museum**, Bengaluru and got great exposure about industry.



15. Science Exhibition

As a part of Golden Jubilee Celebration, Department of Chemistry arranged science exhibition on March 2-7, 2020. Students exhibited various scientific experiments like *pH sensor using red cabbage*, *hydrogen evolution using sodium borohydride*, *red blood cut* and etc., Students from in and around schools to Arul Anandar College visited the exhibition and got benefited.



“We think this newsletter just says a lot about Chemistry between Students and the Department!”

We sincerely thank the management of **Arul Anandar College (Autonomous)**, Karumathur for their extensive support and encouragement.