**Department of Chemical Engineering**

**Research Activity Report (Jul 2019- Dec 2019)**

**1. Research activities of the faculty members:**

Number of faculty in the Department : 19

Number of faculty with Ph D qualification : 07

Number of faculty pursuing Ph D : 06

A). Papers published by the faculty members in National and International Journals:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S. No. | Name of Faculty | Title of the paper | Title of Journal/ Publisher | Date |
| 1 | G.Sudha | Synthesis and characterization of hybrid graphene nanocoolant for heat transfer dissipation in microchannel heat sinks | Chinese journal of chemical Engineering | JUL 2019 |
| 2 | Kavitha N P | Development of Integrated membrane bioreactor and numerical modeling to mitigate fouling and reduced energy consumption in pharmaceutical wastewater treatment | Journal of Industrial and Engineering Chemistry, Vol.76, pp 159-159 | AUG 2019 |

B). Papers presented by the faculty members in National and International conferences/ symposiums/ workshops:

1. K.S. Sakthisri, R. Raageswari, **M. Yogesh Kumar**, Demonstration of Life Cycle Analysis as Sustainability Assessment Tool for Process and Energy Industries and Solid Waste Management, Technological Innovations in Clean Energy Generation and Environmental Remedies, 4 October 2019, Sri Venkateswara College of Engineering, Pennalur.
2. Karthick S, **R.Palani , Sivakumar D,  Meyyappan N,** Parthiban R, Senthilkumar P, “Biosorption of Cr (VI) ions from wastewater by Ficus religiosa barks”First International Conference on Recent Trends in “Clean Technologies for Sustainable Environment (CTSE-2019)” at September 26 – 27, 2019 : SSN College of Engineering, Kalavakkam.

C). National and International Conferences/ symposiums/ workshops attended by the Faculty members:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.****No.** | **Name of Faculty** | **Name of the Conference/ symposium/ workshop** | **Place** | **Date** |
| 1 | Dr. M. Yogeshkumar | QIP- Short term course on “Data Analysis for Modelling of Chemical and Biochemical Reaction Systems Theory to Practice” | Indian Institute of Technology, Madras  | 2-7, December 2019 |
| 2 | Dr.N.Meyyappan | Faculty development programme on “Instrumental methods of analysis” | Sri Venkateswara College of Engineering, Sriperumbudur. | 4- 9, November 2019. |
| 3 | Dr.C.Anandbabu |
| 4 | Dr.Nalinkanth.V.Ghone |
| 5 | Dr.R.Palani |
| 6 | Dr.R.Govindarasu |
| 7 | Dr.M.Yogeshkumar |
| 8 | Ms.A.C.Vijaya Lakshmi |
| 9 | Ms.G.Sudha |
| 10 | Mr.B.S.Vishal |
| 11 | Mr.S.Rajasekar |
| 12 | Mr.D.Sivakumar |
| 13 | Mr.N.Arunpremanand |
| 14 | Mr.S.Jaiganesh |
| 15 | Dr.G.Saraswathi |
| 16 | Ms.N.Sundari |
| 17 | Mr.S.Bharath |
| 18 | Ms.N.P.Kavitha |

**2) Departmental research activities:**

A). Symposium, Conferences, Workshop:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S. No. | Name of the Event | Place | Period | Funding Agency | National/International  | Convener and Faculty In charge |
| 1 | National Level Technical Symposium  “PANSOPHY’19”  | SVCE | 24th Sep 2019 | SVCE | National | Dr.Nalinkanth V Ghone,Mr.S.Bharath |
| 2 | STTP on Instrumental Methods of Analysis | SVCE | 4th Nov 2019 – 9th Nov 2019 | AICTE  | National | Dr.N.Meyyappan,Dr.R.Palani,Mr.D.Sivakumar |
| 3 | Conference on “Technological innovation in clean energy generation and environmental remediation”  | SVCE | 4th October, 2019,  | SVCE | National | Dr.N.Meyyappan,Dr.R.Govindarasu, Ms.G.Sudha |

**Guest lectures Conducted:**

|  |  |  |
| --- | --- | --- |
| S. No. | Name of the Event | Place |
| 1 | Guest lecture on “Overview of Design and Project commissioning for Ore Processing Industries” by Mr. Y Hareesh, Deputy Manager, Projects, FLSMIDTH Pvt. Ltd., Chennai. | 08th Jul 2019 |
| 2 | Guest lecture on “Job Safety Analysis and HAZOP Studies” by Dr. M. Sivarajan, Senior Scientist, CSIR-CLRI, Chennai. | 30th Jul 2019 |
| 3 | Guest lecture on “Solar Cells and its Applications” by Dr. B. Muthuraaman, Assistant Professor, Department of Energy, University of Madras, Chennai. | 07th Aug 2019 |
| 4 | Guest lecture on “Energy Conservation and Management” by Mr. K. Anil Kumar, and Mr. P. Prem Kumar, PCRA Consultants, Chennai | 13th Aug 2019 |
| 5 | National Level Technical Symposium  “PANSOPHY’19” inaugurated with Key note Lecture on “Case Study of Engineering Lapses: Major Corrosion and Fire in Chemical Process Equipment” by Dr. K. Elayaperumal, Former Scientist, BARC, Mumbai. | 24th Sep 2019 |
| 6 | National Level Conference on Technological Innovation on Clean Energy Generation and Environmental Remediation inaugurated with key note lecture on Recent Trends in Research, Patent and Design by Dr.S.P.Subramaniyan, Deputy controller of Patents & Designs, Southern Region, Patent Office, Guindy, Chennai. | 04th Oct, 2019 |
| 7 | Guest lecture on “Atmospheric dispersion Modeling for Air Quality and emergency Response Applications” by Dr. C. Venkata Srinivas, Scientific Officer-G & Head, Radiological Impact Assessment Section, IGCAR, Kalpakkam | 14th Oct 2019 |
| 8 | Expert lecture on Instrumental Analysis in process industries for environmental control by Dr. P T RAGHURAM, Senior scientific officer, Indian Institute of Science, Bengaluru, | 4th Nov 2019 |
| 9 | Expert lecture on Nuclear Magnetic Resonance Spectroscopy – A tool for organic chemical characterization by Dr. K.A. Venkatesan Head, Irradiated Fuel Studies Section, Fuel Chemistry Division, Materials Chemistry and Metal Fuel Cycle Group, IGCAR | 4th Nov 2019 |
| 10 | Expert lecture on Principle and Applications of Inductively Coupled Plasma – Mass Spectrometry by Dr.S.Vijayalakshmi, MCD, IGCAR | 4th Nov 2019 |
| 11 | Expert lecture on Analytical Methods in Processing of Fruit & Vegetables by Dr. D. G. Rao, Retd.Senior Scientist & Head, CFTRI. | 5th Nov 2019 |
| 12 | Expert lecture on Preamble to UV – Visible Spectroscopy” by Dr. Keerthi, Assistant Professor, Department of Chemistry, CEG Campus, Anna University | 6th Nov 2019 |
| 13 | Expert lecture on Heavy Metals Analysis using AAS and AES by Dr.K.Palanivelu, Professor -Centre for environmental studies & Director-Centre for Climate Change & Disaster Management Anna University | 6th Nov 2019 |
| 14 | Expert lecture on Analytical Tools for Surface Characterization by Dr. Sridhar TM, Assistant Professor, Department of Analytical Chemistry, University of Madras | 7th Nov 2019 |
| 15 | Expert lecture on Chemical Analysis by UV – Vis Spectrometer and Gas Chromatography by Dr. B. Suresh Professor, Department of Chemical Engineering, Annamalai University. | 7th Nov 2019 |
| 16 | Expert lecture on Importance of Fundamentals on Using Instruments in an effective way by Dr. S. Pushpavanam, Professor, Department of Chemical Engineering, Indian Institute of Technology Madras | 8th Nov 2019 |
| 17 | Expert lecture on Electrochemical Techniques for sensing of Toxic Metal Ions and Biological Substance by Dr. P. Prabhu, Assistant Professor, Department of Physical Chemistry, University of Madras,Chennai | 8th Nov 2019 |
| 18 | Expert lecture on Cloud Computing in Data Analysis by R.Anitha, Head, Department of Computer Science and Engineering, SVCE, Chennai. | 8th Nov 2019 |
| 19 | Expert lecture on Nano Fluids and its Characterization by Dr. K. Haribabu, Assistant Professor, Department of Chemical Engineering, NIT Calicut. | 8th Nov 2019 |
| 20 | Expert lecture on Particle Size analysis and Zeta potential measurement by Dr. Nalinkanth V. Ghone, Professor - Chemical Engineering & Biotechnology, Joint Co-ordinator – Interdisciplinary Centre for Nanotechnology, SVCE, Chennai | 9th Nov 2019 |
| 21 | Expert lecture on Formation of molecular anion by radioactive electron attachment by Dr. Vijayanand Chandrasekaran, Sr. Assistant Professor, Department of Chemistry, VIT University, Vellore. | 9th Nov 2019 |
| 22 | Expert lecture on Application of Instruments in everyday life by Dr. L Muruganandam, Professor, Department of Chemical Engineering, VIT University, Vellore | 9th Nov 2019 |

**B) Ongoing funded projects in the in the Department:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S. No. | Name of the Project | Funding Agency | Period &Amount Sanctioned | Coordinators | Status of the project |
| 1 | Process development and pilot scale demonstration for removal of metallic and other impurities from used pickle solution of SSTP, NFC | BRNS | 3 Years20.15 Lakhs | Dr. C. AnandBabu and Ms. S. Swathi | In Progress |
| 2 | Production of ultrapure water by indigenous resins and columns | MSME | 1.6 Years6 Lakhs | Dr. C. AnandBabuMr. L.S.Bhadri Narayanan | In Progress |
| 3 | To strengthen Research facilities in all departments | DST- FIST | 40 Lakhs | Dr.NalinkanthV Ghone,Dr.K.Sudhakar Bharathan | In Progress |

**C). Projects submitted to Funding Agencies by the Department:**

|  |  |  |  |
| --- | --- | --- | --- |
| Faculty Name | Title of the Project | Funding Agency | Status |
| Dr.R.Govindarasu    Dr.C.AnandBabu    Dr.N.Meyyappan | Enhancement of Blue energy generation from salinity gradients through modification of Capacitive Reverse Electro Dialysis | DST | Submitted |
| Dr.R.Govindarasu | Design and characterisation of portable Direct Alcohol Fuel Cell power bank | SVCE Intramural Fund | Submitted |

D). Research centre status of the department: Active till Dec-2022

**3) Student Research Activities:**

1. **A). List of projects carried out by the students in the department as in house and Industrial project:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S. No. | Name of Student | Title of the Project | Inherent project maker | In house | Industry |
| **Ph.D., (Chemical Engineering)** |
| 1 | Ms. B. Suganya | “Studies on the effect of different metabolic uncouplers for enhancing the degradation rate of toluene in a bio-film reactor” | Dr. D. Swaminathan | X | - |
| 2 | Mr. L.S.Bhadri Narayanan | Sodium infiltration studies in irradiated metallic fuels using surrogate materials | Dr. C. AnandBabu | X |  |
| **M.Tech., (Chemical Engineering) -**  |
| **B.Tech., (Chemical Engineering) -**  |

 **B). Research Publications by students in National and International Journal:**

 **C). Research Presentations by students in National and International Conferences/ symposiums/ workshops:**

1. K.S. Sakthisri, R. Raageswari, M. Yogesh Kumar, Demonstration of Life Cycle Analysis as Sustainability Assessment Tool for Process and Energy Industries and Solid Waste Management, Technological Innovations in Clean Energy Generation and Environmental Remedies, 4 October 2019, Sri Venkateswara College of Engineering, Pennalur.
2. Karthick S, R.Palani , Sivakumar D  Meyyappan N, Parthiban R, Senthilkumar P, “Biosorption of Cr (VI) ions from wastewater by Ficus religiosa barks”First International Conference on Recent Trends in “Clean Technologies for Sustainable Environment (CTSE-2019)” at September 26 – 27, 2019 : SSN College of Engineering, Kalavakkam.

**D) National and International Conferences / symposiums/ workshops attended by the students:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl.No | Name | Year | CONFERENCE NAME | VENUE | TYPE | DATE |  DATE |
|  | ANANTHARAM.V | III | Shroff S. R. Rotary Institute of Chemical Engineering, Ankleshwar, Gujarat | Gujarat | ORAL | 17.12.19 | 18.12.19 |
|  | N.Ajith Kumar, | III | Shroff S. R. Rotary Institute of Chemical Engineering, Ankleshwar, Gujarat | Gujarat | ORAL | 17.12.19 | 18.12.19 |
|  | Mr.N.N. Harish Kumar | III | Shroff S. R. Rotary Institute of Chemical Engineering, Ankleshwar, Gujarat | Gujarat | ORAL | 17.12.19 | 18.12.19 |
|  | Mr.S Harrish Kumar, | III | Shroff S. R. Rotary Institute of Chemical Engineering, Ankleshwar, Gujarat | Gujarat | ORAL | 17.12.19 | 18.12.19 |
|  | VIJAYAN A | III | Current Trends & Opportunities for Chemical Engineering In oil and Gas industry | SAVEETHA ENGINEERING COLLEGE | PARTICIPATED | 6.9.2019 |  |
|  | NARENDRAN P | III | CURRENT TRENDS & OPPORTUNITIES FOR CHEMICAL ENGG IN OIL,GASINDUSTRY | SAVEETHA ENGINEERING COLLEGE | PARTICIPATED | 6.9.2019 |  |
|  | NARENDRAN P | III | NANO CHEM TECH | SAVEETHA ENGINEERING COLLEGE | PARTICIPATED | 7.9.2019 |  |
|  | VIJAYAN A | III | NANO CHEM TECH | SAVEETHA ENGINEERING COLLEGE | PARTICIPATED | 7.9.2020 |  |
|  | Mr.N.N. Harish Kumar | III | INVENTE 4.0, NATIONAL TECHNICAL FEST | SSNCE | PAPER | 13.9.2019 | 14.9.2019 |
|  | ABIRAMIP | III | INVENTE 4.0, NATIONAL TECHNICAL FEST | SSNCE | POSTER | 13.9.2019 | 14.9.2019 |
|  | DEEPIKA V | III | INVENTE 4.0, NATIONAL TECHNICAL FEST | SSNCE | POSTER | 13.9.2019 | 14.9.2019 |
|  | LALITH KANNA T | III | INVENTE 4.0, NATIONAL TECHNICAL FEST | SSNCE | POSTER | 13.9.2019 | 14.9.2019 |
|  | KARTHICE G | III | INVENTE 4.0, NATIONAL TECHNICAL FEST | SSNCE | PAPER | 13.9.2020 | 14.9.2020 |
|  | BALAJI R | III | INVENTE 4.0, NATIONAL TECHNICAL FEST | SSNCE | PAPER | 13.9.2021 | 14.9.2021 |
|  | SANJAI V | III | EXTRACT - 2K19 | SRIRAM ENGINEERING COLLEGE | PAPER | 19.9.2019 |  |
|  | SANJAI V | III | EXTRACT - 2K19 | SRRAM ENGINEERING COLLEGE | POSTER | 19.9.2019 |  |
|  | N.Ajith Kumar, | III | WORHSHOP IN ASPEN + ,CHEMFLUX 7.0 | SRM INSTITUTE OF SCIENCE AND TECHNOLOGY |  | 10.10.2019 | 11.10.2019 |
|  | Mr.B.Darshan | II | Shroff S. R. Rotary Institute of Chemical Engineering, Ankleshwar, Gujarat | Gujarat | ORAL | 17.12.19 | 18.12.19 |
|  | Ms. J.Anuja, | II | Shroff S. R. Rotary Institute of Chemical Engineering, Ankleshwar, Gujarat | Gujarat | ORAL | 17.12.19 | 18.12.19 |
|  | ARSATH KADER | II | TECHOBYTE WORHSHOP IN IITM | IITM |  | 27.7.19 | 28.7.19 |
|  | MUNUSAMY K | II | COIMBATORE INSTITUTE OF TECHNOLOGY | INDENTIFICATION AND CONTROL OF WORKPLACE HAZARDS |  |  |  |

**4) Sponsorship details of faculty and students:**

**I) Sponsorship for faculty members:**

A) Faculty sponsored for presentation in National : -

 Conferences/ symposiums/ workshops

B) Faculty sponsored for presentation in International : -

Conferences/ symposiums/ workshops

 C) Faculty sponsored for attending national : -

 Conferences/ symposiums/ workshops

**II) Sponsorship for Students:**

1. Students sponsored for presentation in National Conferences/ symposiums/ workshops:

B). Students sponsored for presentation in : -

International Conferences/ symposiums/ workshops

C). Students sponsored for attending national : -

Conferences/ symposiums/ workshops

* 1. **Research cell(s) /area(s) of research in the department:**

Mixing, Hydrotopes, Solar Drying, Environmental Technology, Process Control, Automation of Fuel Cell, Membrane Separation, Waste Water Treatment, Biofuel Technology, Food Processing Technology, Bioprocess monitoring and control, Fluidization Engg, Computational Fluid Dynamics, Electrochemical Process, Corrosion and Advanced Oxidation Process.

* 1. **Consultancy work in the department:**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Industry / Institution** | **Amount (Rs.)** | **Duration** |
| **1.** | IndCzech Pvt Ltd, Chennai  |  |  |
|  |  |  |  |

* 1. **Patent information:**

Co-Ordinator/CH HOD/CH