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BOOK OF ABSTRACTS

INTERNATIONAL CONFERENCE ON

EMERGING FRONTIERS IN CHEMICAL SCIENCES

EFCS-2019

13-15 December 2019

POST GRADUATE AND RESEARCH DEPARTMENT OF CHEMISTRY

FAROOK COLLEGE

(AUTONOMOUS)

Aided by the Govt. of Kerala and Affiliated to the University of Calicut

A College with Potential for Excellence (CPE) ● Re-accredited at 'A+ Grade' by the NAAC

Farook College, Kozhikode, Kerala, India - 673 632.

EFCS-2019
International Conference on Emerging Frontiers in Chemical Sciences
December 13-15
Farook College (Autonomous)

Day 1
13 Dec. Friday

9:00 - 9:30 AM		***Registration** (Library Complex)*
		Inaugural Ceremony (Yousef Al Saqer Auditorium)
9. 30 – 9. 35	:	**PRAYER**
9. 35 – 9. 40	:	**WELCOME SPEECH** Prof. P. E. Mohammad Abdul Rasheed, Head, Department of Chemistry, Farook College
9. 40 – 9. 45	:	**PRESIDENTIAL ADDRESS** Dr. K. M. Naseer, Principal, Farook College
9. 45– 9. 50	:	**PROGRAMME BRIEFING** Prof. V. M. Abdul Mujeeb, Vice Chairman, Organizing Committee
9. 50 – 9. 55	:	**INTRODUCING CHIEF GUEST** Dr. A. K. Abdul Rahim, Vice Chairman, Organizing Committee
9. 55 – 10. 05	:	**INAUGURATION** Padma Bhushan Prof. Padmanabhan Balaram, Former Director, IISc, Bangalore
10. 05 – 10. 10	:	**Adorning of Prof. Padmanabhan Balaram with Ponnada** Mr. P. K. Ahamed, President, Managing Committee, Farook College **Presenting Memento** Mr. K. V. Kunhammed Koya, Secretary, Managing Committee, Farook College
10. 10 –10-15	:	**RELEASE OF BOOK OF ABSTRACTS** Dr. C. L. Joshy, Registrar, University of Calicut

10. 15 – 10. 25	:	**Honouring *Prof. T. Pradeep for the distinguished service to Chemical Sciences*** Honouring statement: Dr. Shalina Begum, Joint Convener, Organizing Committee **Adorning of Prof. T. Pradeep with Ponnada** Mr. C. P. Kunhimohammed, Manager, Managing Committee, Farook College Presenting Memento: Padma Bhushan Prof. Padmanabhan Balaram **Reply Speech** by Prof. T. Pradeep
10. 25- 10. 30	:	Course Briefing: Dr. A. P. Kavitha Joint Convener, Organizing Committee **Inauguration of Certificate Course in Water Analysis** **Padma Bhushan Prof. Padmanabhan Balaram**
10. 30- 10. 35	:	**FELICITATIONS** Prof. E. P. Imbichikoya, Former Principal, Farook College Dr. Santosh R Nandan, Director, Ambernath Organics Pvt Ltd, Mumbai
10. 35 – 10. 40	:	**VOTE OF THANKS** Mr. P A Mohammed Ziyad, General Coordinator, Organizing Committee

Inaugural Address

10:45 - 11:25 AM	:	***Chemical Communication in Biology: The Emergence of Chemical Ecology*** **Padma Bhushan Prof. Padmanabhan Balaram** Former Director, Indian Institute of Science, Bangalore
11:25 -11:40 AM		***Tea Break***

Technical Session 1

Chair: ***Prof. K. Koyatty***
EFCS Vision Group Member
Rtd. Professor, Department of Chemistry, Farook College

11:40 - 12:20 PM	*Clathrate hydrates in interstellar environment* **Prof. T. Pradeep** IIT Madras
12:20 - 12:35 PM	*Conference Photo Session*
12:35 - 2:00 PM	***Lunch***

Technical Session 2

Chair: ***Dr. K. K. Devadas***
EFCS Vision Group Member
Former Head, Department of Chemistry, Malabar Christian College

2:00 - 2:40 PM	*Speed in Chemistry* **Prof. R. Graham Cooks** Purdue University, USA
2:40 - 3:40 PM	*Interactive Session with Resourse Persons*
3:40 - 4:00 PM	***Tea Break***

Technical Session 3

Chair: ***Prof. K Muraleedharan***
Professor, Department of Chemistry
University of Calicut

4:00 - 4:45 PM	***Oral Presentations***
4:45 - 6:00 PM	***Poster Presentation***
7:00 - 8:30 PM	**Conference Dinner** ***The Raviz resort, Kadavu***

Day 2
14 Dec. Saturday

Technical Session 4

Chair: ***Prof. K. K. Unnikrishnan***
EFCS Core Committee member
Rtd. Proferssor, Department of Chemistry, Farook College

9:30 -10:10 AM	*Chemical Selectivity and Micro/Nano Sensors* **Prof. Thomas Thundat** The State University of New York
10:10 - 10:50 AM	*Functional Molecular Phase Change Materials: Critical Role of Oriented Assembly in Strongly Fluorescent Solids* **Prof. T. P. Radhakrishnan** University of Hyderabad
10:50 -11:30 AM	*Hymn of herbs: Searching for panaceas from Western Ghats* **Dr. K. V. Radhakrishnan** CSIR-NIIST, Trivandrum
11:30 - 11:45 AM	***Tea Break***

Technical Session 5

Chair: ***Dr. Yahya A. I***
Head, Department of Chemistry
University of Calicut

11:45 - 12:25 AM	**Tunable Graphene -Based Membranes** **Dr. Christie Thomas Cheriyan** Christ University, Bangalore
12:25 - 1:05 PM	*Development of Special Steel at Peekay Steel Castings and Challenges Faced Based on New Industrial Senario* ***Industrial talk*** **Mr. BarundebRaha**

Peekay Steel Castings (P) Ltd, Kozhikode

1:05 – 2. 00 PM — ***Lunch***

Technical Session 6

Chair: Dr. V. M. Abdul Mujeeb
Vice Chairman, EFCS
Rtd. Head, Department of Chemistry University of Calicut

2:00 - 2:40 PM — *Catalytic active site elucidation of supported noble metal nanoparticles using spectroscopic tools*
Dr. Vinod C. Prabhakaran
CSIR-NCL, Pune

2:40- 3:20 PM — *Nanostructured materials for highly efficient solar-thermal conversion and rapid water evaporation*
Prof. C. Subramaniam
IIT Bombay

3:20-4:00 PM — *Methane Clathrate: One of the most abundant form of fossil fuel is waiting to be tapped!*
Dr. Rajnish Kumar
IIT Madras

4. 00 – 4. 15 PM — ***Tea Break***

4:15 - 6:30 PM — Local Tour

7:00 - 8:30 PM — *Dinner and Cultural Programme, Auditorium*

Day 3
15 Dec. Sunday

Technical Session 7

Chair: ***Prof. K. M. Abdur Rasheed***
Former Registrar, Kannur University
Rtd. Proferssor, Department of Chemirty,
Farook College

9:30 - 10:10 AM — *The alternative CO2-solvent platform for chemical industry*

10:10 - 10:50 AM	**Dr. P. Raveendran** University of Calicut *Ultrafast Excited State Dynamics of Twisted Aromatics* **Dr. Mahesh Hariharan** IISER, Trivandrum
10:50 - 11:05 AM	***Tea Break***
11:05 – 12. 00 PM	***Valedictory Session and Concluding Remarks***
12:00 – 1. 00 PM	***Lunch***

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A Comprehensive Study of Mild Steel Corrosion in Aggressive Acidic Environment Using Garcinia Indica(GI) Fruit Rind Extract

Asha Thomas[1], Rugmini Ammal P[2] and Abraham Joseph[3]
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The corrosion inhibition property of Garcinia Indica fruit rind extracton mild steel corrosion in 0.1 M HCl was carried out by weight loss and electrochemical studies. The weight loss analysis shows that as the volume % of the inhibitor inhibition efficiencyshows a linear relationship. This observation was further substantiated by EIS and potentiodynamic polarisation studies. The similar shape of the Nyquist plot obtained from the Electrochemical impedance studies reveals that the addition of inhibitor does not alter the mechanism of corrosion, instead it happens mainly through a charge transfer process. The potentiodynamic studies show that the GI act as a mixed type inhibitor, decreasing both the anodic process of metal dissolution and cathodic process of hydrogen evolution. The effect of temperature was studiedup to 308K. The inhibition efficiency does not alter much with temperature, show a positive shift, is attributed to the chemisorption of molecules on the metal surface. The adsorption obeys Langmuir adsorption isotherm.