

**KONGU ENGINEERING COLLEGE, PERUNDURAI, ERODE-638060**  
**(Autonomous)**

**DEPARTMENT OF CHEMISTRY**

**"Five Days Virtual Faculty Development Programme on "Vital Visionary Approach for  
Researchers-Recent Chemistry Perspective"  
from 20.07.2020 to 24.07.2020**

**Broucher:**



**KONGU ENGINEERING COLLEGE**  
(Autonomous)  
AFFILIATED TO ANNA UNIVERSITY  
ACCREDITED BY NAAC WITH 'A' GRADE  
PERUNDURAI, ERODE - 638 060, TAMILNADU, INDIA



Transform Yourself

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**SCHOOL OF SCIENCE AND HUMANITIES**  
**DEPARTMENT OF CHEMISTRY**  
**FIVE DAYS VIRTUAL FACULTY DEVELOPMENT PROGRAMME**  
ON  
**"VITAL VISIONARY APPROACH FOR**  
**RESEARCHERS-RECENT CHEMISTRY PERSPECTIVE"**  
(20<sup>th</sup> to 24<sup>th</sup> JULY, 2020)



**Dr. Ramesh Laxminarayan Gardas**  
Professor  
Department of Chemistry  
IIT Madras

**"IONIC LIQUIDS AS GREEN SOLVENTS FOR  
SUSTAINABLE DEVELOPMENTS IN CHEMICAL  
AND TECHNOLOGICAL APPLICATIONS"**

*Day 1*

**JOIN ON 20/07/2020**  
(10:30 AM - 11:30 AM)



**Dr. Venkata Krishnan**  
Associate Professor  
Department of Chemistry  
IIT Mandi

**"RATIONAL DESIGN AND DEVELOPMENT  
OF NANOSTRUCTURED HETEROGENEOUS  
CATALYSTS FOR ENERGY AND  
ENVIRONMENTAL APPLICATIONS"**

*Day 2*

**JOIN ON 21/07/2020**  
(10:30 AM - 11:30 AM)



**Dr. Rajendiran Venugopal**  
Assistant Professor  
Department of Chemistry  
Central University of Tamilnadu  
Thiruvavur

**"EVOLVING VARIOUS STRATEGIES TO  
TARGET CANCER CELLS"**

*Day 3*

**JOIN ON 22/07/2020**  
(10:30 AM - 11:30 AM)



**Dr. Manikandan Paranjothy**  
Associate Professor  
Department of Chemistry  
IIT Jodhpur

**"DYNAMICS AND MECHANISMS  
OF CHEMICAL REACTIONS VIA  
CLASSICAL TRAJECTORY SIMULATIONS"**

*Day 4*

**JOIN ON 23/07/2020**  
(10:30 AM - 11:30 AM)



**Dr. Arun Prakash Periasamy**  
Postdoctoral Research Associate  
School of Engineering and Materials Science  
Queen Mary University of London

**"DEVELOPMENT OF SUSTAINABLE  
MATERIALS FOR ELECTROCHEMICAL  
WATER SPLITTING"**

*Day 5*

**JOIN ON 24/07/2020**  
(03:00 PM - 04:00 PM)

**PLATFORM : GOOGLE MEET**

**REGISTER @**  
**<https://forms.gle/8tKKftQ>**  
**AfsvEWf8v8**

**No Registration Fee**  
**E-Certificate will be provided**

**PATRON**  
**Dr.V.Balusamy**  
Principal  
Kongu Engineering College

**CHAIRMAN**  
**Dr.P.N.Palanisamy**  
Professor & Head  
Dept. of Chemistry  
9750264390

**CONVENER**  
**Dr.A.Geetha**  
Assistant Professor  
Dept. of Chemistry  
9789498866

**Co-CONVENER**  
**Ms.A.Revathi**  
Assistant Professor  
Dept. of Chemistry  
9942303014

**PARTICIPANTS DETAILS:**

<b>KONGU ENGINEERING COLLEGE,PERUNDURAI,ERODE-638 060</b>			
<b>DEPARTMENT OF CHEMISTRY</b>			
<b>Five Days Virtual FDP on “Vital Visionary Approach for Researchers-Recent Chemistry Perspective</b>			
<b>Date:20.07.2020 to 24.07.2020</b>			
<b>List of Participants Details</b>			
<b>S. No</b>	<b>Full Name</b>	<b>Name of the Institution</b>	<b>Designation</b>
1	MRS.D.KIRTHIGA	K S RANGASAMY COLLEGE OF TECHNOLOGY	ASSISTANT PROFESSOR
2	R. Mayildurai	Kumaraguru College of Technology	Assistant Professor
3	Dr Arshia Akhtar	Aligarh Muslim University	Having capacity to work as a Assistant Professor
4	Mrs.BINDU PAVAN V	JNN college of engineering	Assistant professor
5	Mrs. Kowshalya V N	Kongu Engineering College	Assistant Professor
6	Dr.K.ROJA	S V Engineering College	Associate professor
7	Dr.D.Jalajaa	Kumaraguru College of Technology	Assistant Professor
8	Mr KARTHIK K	Kumaraguru College of Technology Coimbatore	Assistant Professor in Chemistry
9	Dr.A.Mano Priya	PSGR Krishnammal college for Women	Assistant Professor
10	C.Sivashankar	Paavai Engineering College	Student
11	Mr A DHAMOTHARAN	Builders Engineering College	Assistant Professor
12	Ms. M. Sivasankari	Nirmala college for women, Coimbatore	III B. Sc Chemistry
13	Dr K Srilatha	ACE Engineering College	Assistant Professor
14	Dr.K.SOUJANYA	CMR College of Engineering & Technology	Associate Professor
15	Dr.K.Leena	Sarah Tucker College	Assistant Professor and Head
16	Dr.N.ARUNKUMAR	Saraswati Narayanan College Madurai	Assistant Professor
17	Mrs. Swathi Thumula	Sreenidhi Institute of Science and Technology	Assistant professor
18	Dr. Satheesh Ampolu	Maha Raja's Degree College,	Assistant Professor
19	Dr. V. PUSHPANATHAN	KINGS ENGINEERING COLLEGE, CHENNAI	Assistant Professor
20	DHANUSH M S	Government Arts College (Autonomous)	I B.Sc., Chemistry

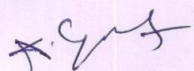
21	Dr. J. ANTONY RAJAM	St. Mary's College (Autonomous)	Assistant Professor in Chemistry
22	Dr.A.THIRUMOORTHY	Government Arts College, Udumalpet	Assistant Professor of Chemistry
23	M.Kiruthiga	Government College for women Autonomous Kumbakonam	Guest lecturer
24	Mr.K.DEIVARAJ	GOVT KALLAR HR SEC SCHOOL SEVUGAMPATTI	PG ASSISTANT
25	Dr.M.THENKUZHALI	TBML COLLEGE	Assistant professor of chemistry
26	Dr. S. CHANDRASEKARAN	ARASU ENGINEERING COLLEGE	ASSOCIATE PROFESSOR & HEAD
27	Dr. C. Subha	Nirmala College for Women	Assistant Professor
28	AMULYAM RANTHU	PRAGATI ENGINEERING COLLEGE	Asst professor
29	Dr. S. TAMILVANAN	Annamalai University	Assistant professor
30	Dr. P. SATHEESH KUMAR	Dr. N.G.P INSTITUTE OF TECHNOLOGY	ASSISTANT PROFESSOR
31	Dr.Dhondiram Tukaram Sakhare	Shivaji Arts, Comm. & Science College Kannad Dist. Aurangabad	Assistant Professor
32	Mr. Rakesh Kumar	Govt. College Barwala, Panchkula (Haryana)	Assistant Professor
33	Murugesan A	SSN College of Engineering	Assistant Professor
34	Mrs.R.ABIRAMI	VELAMMAL COLLEGE OF EDUCATION, HARUR.	B.Ed.,
35	Prof. Saurabh Jawahar Sanghavi	SVPM college of Pharmacy, Malegaon, Baramati Dist- pune	Assistant Professor
36	Dr.N.Gunavathy	Nirmala College for Women	Assistant Professor
37	D.SUDHA	KPRIET	AP/CHEMISTRY
38	Dr. N. Prabu	Government Thirumagal Mills College, Gudiyattam	Guest lecturer
39	KRISHNAVENI K	KONGU ENGINEERING COLLEGE, PERUNDURAI, ERODE	ASSISTANT PROFESSOR
40	Dr.P.RAJESH	GOVT ARTS COLLEGE COIMBATORE	ASST PROFESSOR
41	K. LAWRENCE MARY	IFET COLLEGE OF ENGINEERING	ASSISTANT PROFESSOR
42	Mr. Mohammed Rafi	Vivekananda degree college	Assistant professor
43	Dr. A. THAMINUM ANSARI	Muthurangam Govt.Arts College Vellore.2	Assistant Professor of Chemistry
44	Samritisharma	University of Jammu	Scholar
45	Mr.S.SUBRAMANIAN	Nandha Arts and Science College	Assistant Professor
46	Dr. Deepak Sukhadeo Rajmane	Shrimant Babasaheb Deshmukh Mahavidyalaya, ATPADI.	Assistant Professor
47	Mrs. D. CAROLIN JENIBA RACHEL	St. Mary's College (Autonomous), Thoothukudi	Assistant Professor
48	Mr.M.A.SARAVANA	Velammal Institute of Technology, Panchetti,	Assistant Professor


	N	Chennai-601204.	
49	Dr. Shilpi Shrivastava	Kalinga University Naya Raipur Chhattisgarh	Professor
50	Ms. P. Indhumathy	PSGR Krishnammal College for Women	Research Scholar
51	Dr V.Sivakumar	Department of Chemistry, Sri Vasavi College, Erode-638316	Assistant Professor of Chemistry
52	Ms. Lakshmi SarvaniGanduri	SRK institute of technology	Assistant professor
53	AjanthaAekis T	Sree Devi Kumari Women's College, Kuzhithurai	Assistant Professor of Chemistry
54	Mrs. R. TAMILISAI	Kongu Engineering College	Assistant Professor
55	Mr. G. KALAIYAN	Sri Vidya Mandir Arts and Science College (Autonomous), Katteri.	Assistant Professor of Physics
56	MS. KM. POOJA	CHAUDHARY CHARAN SINGH UNIVERSITY MEERUT	PhD scholar
57	Dr. S. Daniel	Kumaraguru College of Technology	Asst Professor SRG
58	Mrs D.Swapna	Dadi Institute of Engineering and Technology	Asst.Prof.
59	Dr.H.RRAMESH BABU	KITS,WARANGAL	ASSOCIATE PROFESSOR
60	Mr. B.BALAPRASAD	SARANATHAN COLLEGE OF ENGINEERING	ASSISTANT PROFESSOR
61	G V R SAI MADHUKAR	SRR GOVT. ARTS AND SCIENCE COLLEGE, KARIMNAGAR	Asst. Professor of Chemistry
62	GATTU KUMAR SRINIVASULU	Keshav Memorial Institute of Technology, Hyderabad	Assistant professor
63	Dr. S. Jeya Sheela	Saraswathi Narayanan College Madurai	Assistant Professor
64	Ms.S.R.YazhiniPirabha,BSc.Chemistry,	Trinity College For Women,Namakkal.	Pg student
65	Ms.K.Kiruthiga	Hindustan Institute of Technology and Science	AP(SG)
66	Dr. S. Shamim Rishwana	Kamaraj College of Engineering and Technology	Assistant Professor
67	Dr. N. MADANKUMAR	Mahendra Arts and Science College	Assistant Professor of Chemistry
68	Dr. RADHA K S	RMD ENGINEERING COLLEGE	Associate Professor
69	Dr.T.A.SUKANTHA	KSRCT TIRUCHENGODE	Professor
70	Dr.PapiyaDhara	Adamas University	Assistant Professor
71	M.SWATHIKA	PSGR Krishnammal College for Women	Research scholar
72	Mrs.J.JeyaseeliRebeckal	Annai college of arts and science,	Assistant professor of chemistry
73	Dr.M.Shanmuganathan	Panimalar Engineering College	Assistant Professor
74	Dr.S.TAMILSELVI	J.K.K.Nataraja College of Arts & Science, Komarapalayam	Assistant Professor of Chemistry
75	Dr Krishan Kumar	DeenbandhuChhotu Ram University of Science and Technology MURTHAL Sonipat Haryana	Assistant Professor

76	Mr. KUNTAL KOLEY	Central University of Kerala	MSc chemistry
77	Dr.M.RAJASEKAR	K.S.R.COLLEGE OF ENGINEERING	ASSISTANT PROFESSOR
78	Ms.E.ABINAYA	Holy cross college	II M.Sc chemistry
79	DR.SHANNO PATHAN	Anand Vihar College for women Bhopal Madhya Pradesh	Assistant Professor
80	Mrs. K. VIVITHABHARATHI	PSGR Krishnammal College for Women, Coimbatore	Research Scholar
81	Mrs. JAYACHITRA S	S A ENGINEERING COLLEGE	ASSOCIATE PROFESSOR
82	Dr. S. Sathishkumar	Kongu Engineering College, Erode	Assistant Professor
83	Dr.K.BUVANESWARI	Sri.S.Ramasamy Naidu Memorial College,Sattur	Chemistry
84	Dr.T.Madhukar Reddy	Kakatiya Institute of Technology and Science	Associate professor
85	Dr.K.KANNAKI	GOVT ARTS & SCIENCE COLLEGE FOR WOMEN	ASSISTANT PROFESSOR OF PHYSICS
86	Dr. P. Malarkodi	Kongu Engineering College, Perundurai	Assistant Professor
87	DR. RANVIJAY PRATAP SINGH	Faculty of Engineering & Technology, University of Lucknow	Assistant Professor
88	G.SRIDEVI	Sriram Engineering college	Assistant professor
89	A Sudha	Kongu Engineering college	Assistant
90	Cola Pushpanjali	Cola Pushpanjali	Lecturer
91	Mr PRUTHVIRAJ NALAVADE	Pune University	Student
92	Dr. K. CHANDRASEKARAN	Dr. Ambedkar Government Arts College Vyasarpadi Chennai-39	Assistant Professor of Chemistry
93	Ms.R.Mythili	Coimbatore Institute Of Technology	B.Tech Chemical Engineering
94	Dr.V.Balamurugan	Saranathan College Engineering	Assistant Professor
95	Dr.A.Rukmani	Seethalakshmi Achi College for Women	Associate Professor of Chemistry
96	Mr. Sachin Kashinath Dhawale	Gharda Institute of Technology, Lavel	Assistant Professor
97	Mrs. SWATI S. DESHMUKH	Podar International school Raipur Chhattisgarh	Science Teacher (TGT)
98	Dr.S.SUMITHRA	TBML COLLEGE,PORAYAR	ASSISTANT PROFESSOR OF CHEMISTRY
99	KARPAGA RAJAN R	Vidyaa Vikas College of Engineering and Technology,Tiruchengode	Associate Professor
100	Dr	S.SUBBURAYALU	ASSISTANT PROFESSOR
101	Mr MD GHUSE MOHIDDIN KHAN	Bharathiar University,	Research scholar
102	Mr. D. NESAKUMAR	KONGU ENGINEERING COLLEGE	ASSISTANT PROFESSOR



3	YOGHANANTHAN		
10	Dr. K. MANJULA RANI	KONGU ENGINEERING COLLEGE	ASSISTANT PROFESSOR
10	Dr.V.Sreeja	Vellalar College for Women(Autonomous)	Assistant Professor of Chemistry
10	Mrs.K.RATHIDEVI	KUMARAGURU COLLEGE OF TECHNOLOGY	Assistant Professor
10	Mr.Ravindra Radhakrishna Joshi	Thadomal Shahani Engineering College	Assistant professor
10	RAVIKUMAR.P	Sv ENGINEERING COLLEGE,TIRUPATI	Assistant professor
10	RAGINI GUPTA	DEEN DAYAL UPADHYAYA GORAKHPUR UNIVERSITY	Research Scholar
11	Dr.V.SWARNALATH A	St.Joseph's College of Engineering	Assistant Professor
11	Dr. K. SARAVANAN	Thiruvalluvar Government Arts College	Assistant Professor of Chemistry
11	Dr. P.S. KANNAN	KINGS ENGINEERING COLLEGE, CHENNAI	PROFESSOR
11	Dr. Anamika Kalita	Institute of advanced study in science and technology, govt. of india	DST-INSPIRE Faculty
11	Mr. SHAIKH NAZRUL	NORTH ORISSA UNIVERSITY	Research Scholar
11	S.Chitra	SNS College of Engineering	Assistant professor
11	Mr.JAYAMANI T	Alpha college of engineering,chennai-124	Assistant professor
11	Mr.A.ARUN KUMAR	MOTHER THERESA INSTITUTE OF ENGINEERING AND TECHNOLOGY	ASSISTANT PROFESSOR
11	Mr. Arup Dutta	North-Eastern Hill University, shillong	Research Scholar
11	E.DHANASEKARAN	ERODE SENGUNTHAR ENGINEERING COLLEGE	Assistant Professor
12	Dr.K.Prabha	K S Rangasamy College Of Technology	Associate Professor

  
**CONVENER**  
 (Dr. A. GEETHA  
 ASP/CHEMISTRY)

  
**HOD**  
 Dr.P.N.PALANISAMY, M.Sc.,Ph.D.,  
 PROFESSOR  
 DEPARTMENT OF CHEMISTRY  
 KONGU ENGINEERING COLLEGE  
 PERUNDURAI, ERODE-638 060.

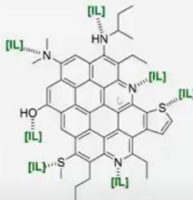
## EVENT PHOTOS:

[Inbox \(757\) - areavathi.sh@kongu...](#)
[Chemistry Sdsy FDP 2020 \(1\)](#)
[drive.google.com/file/d/1UT1bPjsMQ3m47qA9-TpXoH86YKuFV3U/view?ts=61bdad33](#)

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### ILs for Crude-Oil Sludge Dissolution



**Proposed mechanism for the enhancing dissolution of Petroleum Sludge in solvents in the presence of ILs**

International Patent: PCT/IN2014/004097  
Filed on 17 Nov. 2014  
Published: WIPO 2015 / 071881 A1 on 21 Mar 2015

#### Application 1

##### Oil India Ltd.

SARA analysis of TBS (by Oil India Ltd.)

Saturates	: 25 %
Aromatics	: 68 %
Asphaltenes + Resins	: 7 %

- Asphaltene interact with cation/anion of IL
- Aliphatic & aromatic moieties bounded to asphaltene become free to dissolve in solvent

**energyfuels**

*Experimental Investigation on the Effect of Aliphatic Ionic Liquids on the Solubility of Heavy Crude Oil Using UV-Visible, Fourier Transform Infrared, and <sup>13</sup>C NMR Spectroscopy*

Aravind Mahalingam, Sushil Kumar, Rajesh K. Lakshmi, and Aravind S. Srinivasan

Dr. Aravind Mahalingam, Professor, Petroleum Engineering Program, Department of Chemical Engineering, Indian Institute of Technology (IIT) Madras, Chennai 600 075, India

Dr. Sushil Kumar, Assistant Professor, Department of Chemical Engineering, Indian Institute of Technology (IIT) Madras, Chennai 600 075, India

Dr. Rajesh K. Lakshmi, Assistant Professor, Department of Chemical Engineering, Indian Institute of Technology (IIT) Madras, Chennai 600 075, India

Dr. Aravind S. Srinivasan, Professor, Department of Chemical Engineering, Indian Institute of Technology (IIT) Madras, Chennai 600 075, India

**Key:** Efficient and green method for the enhanced dissolution of aromatic crude oil sludge using ionic liquids

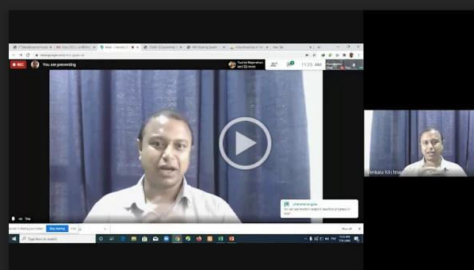
**Keywords:** Dissolution, Heavy Crude Oil, Ionic Liquids, Petroleum Sludge, UV-Visible, FTIR, NMR

**DOI:** 10.1016/j.energyfuels.2014.11.014

**Received 11 Sep 2014; Accepted 27 Jan 2015**

**Published online 12 Feb 2015**

[View full text](#)





Chemistry Sday FDP 2020 (2020-07-20 at 21:34 GMT-7) - Google Drive

https://drive.google.com/file/d/11Lsp5XOKTXaIlMb249Tjvq5t6gXD0XNID/view

Chemistry Sday FDP 2020 (2020-07-20 at 21:34 GMT-7)

Green Catalysts for Organic Synthesis  
K-functionalized  $gC_3N_4$  on RGO for Knoevenagel condensation

ACS APPLIED NANO MATERIALS

Potassium-Functionalized Graphitic Carbon Nitride Supported on Reduced Graphene Oxide as a Sustainable Catalyst for Knoevenagel Condensation

Ashish Bahuguna, Ashwani Kumar, Tripti Chhabra, Ajay Kumar, and Venkata Krishnan\*

School of Basic Sciences and Advanced Materials Research Center, Indian Institute of Technology Mandi, Kamand, Himachal Pradesh 173005, India

A. Bahuguna, A. Kumar, T. Chhabra, A. Kumar and V. Krishnan, Potassium-Functionalized Graphitic Carbon Nitride Supported on Reduced Graphene Oxide as a Sustainable Catalyst for Knoevenagel Condensation, *ACS Appl. Nano Mater.* **2018**, *1*, 6711-6723.

1:06:03 / 1:25:34

11:58 AM 18-12-2021

Chemistry Sday FDP 2020 (2020-07-20 at 21:34 GMT-7) - Google Drive

https://drive.google.com/file/d/11Lsp5XOKTXaIlMb249Tjvq5t6gXD0XNID/view

Chemistry Sday FDP 2020 (2020-07-20 at 21:34 GMT-7)

Green Catalysts for Organic Synthesis  
K-functionalized  $gC_3N_4$  on RGO for Knoevenagel condensation

ACS APPLIED NANO MATERIALS

Potassium-Functionalized Graphitic Carbon Nitride Supported on Reduced Graphene Oxide as a Sustainable Catalyst for Knoevenagel Condensation

Ashish Bahuguna, Ashwani Kumar, Tripti Chhabra, Ajay Kumar, and Venkata Krishnan\*

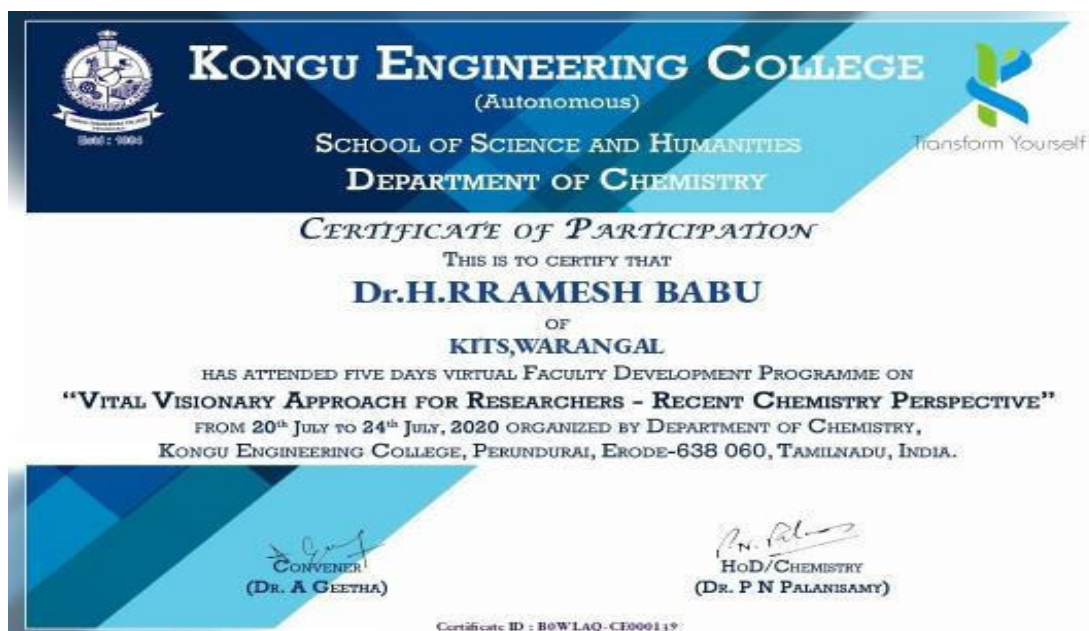
School of Basic Sciences and Advanced Materials Research Center, Indian Institute of Technology Mandi, Kamand, Himachal Pradesh 173005, India

A. Bahuguna, A. Kumar, T. Chhabra, A. Kumar and V. Krishnan, Potassium-Functionalized Graphitic Carbon Nitride Supported on Reduced Graphene Oxide as a Sustainable Catalyst for Knoevenagel Condensation, *ACS Appl. Nano Mater.* **2018**, *1*, 6711-6723.

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Certificate Model:



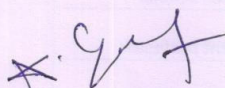
**KONGU ENGINEERING COLLEGE, PERUNDURAI - 638 060, ERODE, TN, INDIA  
(AUTONOMOUS)  
DEPARTMENT OF CHEMISTRY  
organises**

**Five Days Virtual Faculty Development Programme  
on  
"Vital Visionary Approach for Researchers-Recent Chemistry Perspective"  
from  
20<sup>th</sup> July to 24<sup>th</sup> July 2020**

### **SUMMARY REPORT**

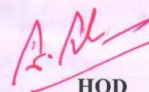
The Department of Chemistry, Kongu Engineering College, successfully organized Five Days Virtual Faculty Development Programme on "Vital Visionary Approach for Researchers-Recent Chemistry Perspective" from 20<sup>th</sup> July to 24<sup>th</sup> July 2020. Google Meet Platform used to organise the programme. The Registration link used for the FDP was <https://forms.gle/8tKKftQAfsvEWf8v8>, No Registration fee was collected for all category like students, faculty and research scholars etc., This FDP offered an excellent platform

to the faculty, students and research scholars in helping them to strengthen their knowledge in the field of Chemistry. We invited the following Resource Persons--On 20.07.2020, **Dr. Ramesh Laxminarayan Gardas**, Professor, Department of Chemistry, IIT Madras, On 21.07.2020, **Dr. Venkata Krishnan**, Associate Professor, Department of Chemistry, IIT Mandi, On 22.07.2020, **Dr. Rajendiran Venugopal**, Assistant Professor, Department of Chemistry, Central University of Tamilnadu, Thiruvavur, On 23.07.2020, **Dr. Manikandan Paranjoth**, Associate Professor, Department of Chemistry, IIT Jodhpur, On 24.07.2020, **Dr. Arun Prakash Periasamy**, Postdoctoral Research Associate, School of Engineering and Materials Science Queen Mary University of London. Students and few faculty have attended the FDP. Dr. P.N. Palanisamy, Professor & Head, Department of Chemistry welcomed the gathering on first day of the FDP. The FDP ended with vote of thanks by Dr. A. Geetha, Assistant Professor, Department of Chemistry. Nearly 350 participants have registered and 120 participants are received E-certificates for the programme.



CONVENER

Dr. A. GEETHA  
ASP/CHEMISTRY



HOD

Dr. P.N. PALANISAMY, M.Sc., Ph.D.,  
PROFESSOR  
DEPARTMENT OF CHEMISTRY  
KONGU ENGINEERING COLLEGE  
PERUNDURAI, ERODE-638 060.