

Report on the concluded Webinar on “Emerging Techniques in Polymers on 12th of June 2021”

To instigate the drive towards research in the young minds, VFSTR initiated webinar on different areas of Science and Technology. In that regard, Division of Chemistry, from Department of Sciences and Humanities (S&H) organized a webinar on “*Emerging Techniques in Polymers*” on 12th of June 2021.

The event was formally started by the Convenor Dr. Chandrasekar K, Associate Prof, Division of Chemistry, S&H VFSTR, by highlighting the significance of the theme and guided the young researchers to orient towards environmentally benign materials. Dr. K. Prabhakar Rao, Head of the Chemistry Division and Dr. N. Srinivasu, Head of the Department, S&H addressed the gathering with the importance of the theme by mentioning the importance of recycling and their potential to biodegrade under stressed condition. For the webinar, two eminent persons in the field of polymers were invited from reputed institution and research labs.

The first speaker **Dr. C. V. Avadhani**, Former scientist, and Adjunct Professor from CSIR-NCL Pune, talked about “*Wonders from waste*” where he emphasized on recycling plastic wastes by categorically mentioning commonly used plastic and how they can be converted in value added products. He clearly claimed that the so-called plastic pollutants can be recycled and reused, if the nature of the polymer waste is known, which he substantiated by sharing the numerous patents and publications in collaboration between his institute and different industries. To name a few he discussed the processes they used to convert some of the polymer waste from PET bottles, PC wastes and Tyres. In his entire talk he positively argued and gave a solid impression that plastics are not anymore pollutants, they are just intermediates which can be used recycled and re-used. Before concluding his talk, he mentioned the use of polymer wastes as concrete materials or plastic roads, which is slowly gaining phase as part of 3R strategy.

The second speaker **Dr. Tarun Kanti Panda**, Professor, Department of Chemistry, Indian Institute of Technology Hyderabad (IITH) talked about “*Recent advancements in Alkali & Alkaline-earth metal complexes supported by various non-cyclopentadienyl-based ligands*” as a potent catalyst for the development of various biodegradable polymers with desired properties. He presented the efficiency of the catalyst on the Ring-Opening Polymerization of some of the easily available monomer molecules like ϵ -Caprolactone, rac-Lactides and Lactams. He also emphasized the importance of atom economy reactions, how to design a catalyst with controlled activity and how to control the stereochemistry of the polymers by regulating the catalyst mechanism. The session was ended with few questions from the participants and a prompt response by the speaker.

The webinar was attended by students and research scholars at a higher percentage. The event was concluded by Dr. P.V.V.N. Kishore presenting the vote of thanks. On the whole 490 participants registered and out of that around 225 participants attended the webinar. The motive of the webinar was partially fulfilled, as a greater number of PG students and Research scholars

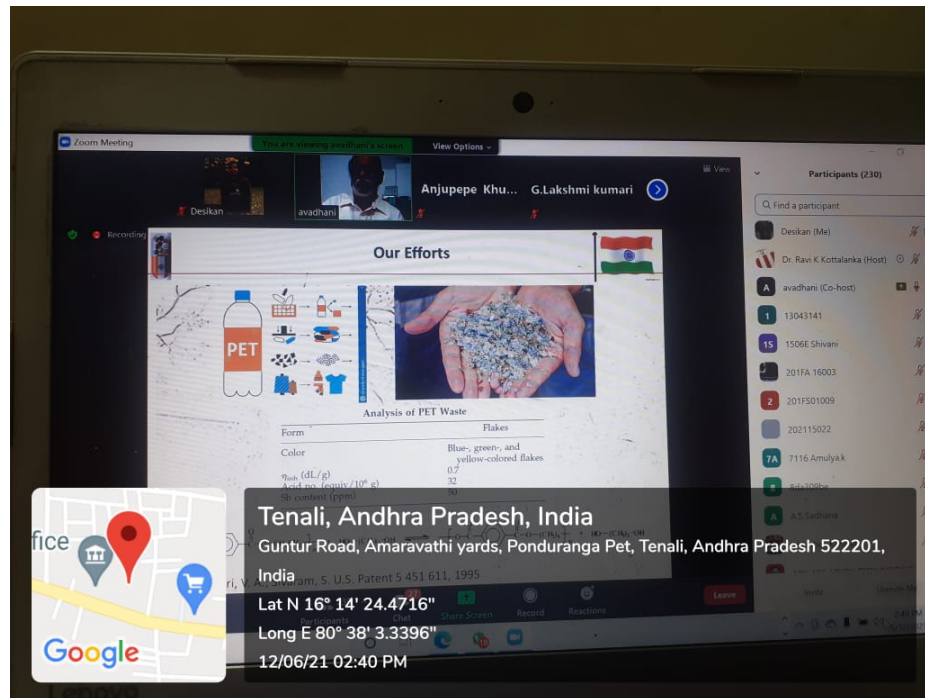
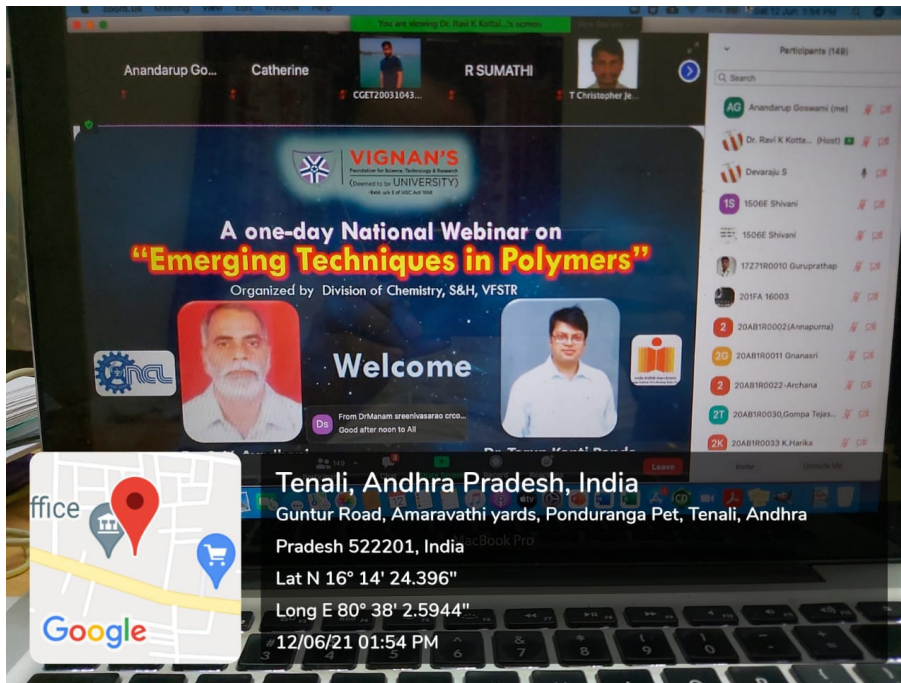
attended when compared to Faculty members from various institutes. This motive will be complete if they apply the knowledge gained here in their research work.

Dr. C.V.Avadhani
Former Scientist,
Polymer Science and Engineering
Division,
CSIR-National Chemical Laboratory,
Pune 411008, INDIA.



Dr. Tarun Kanti Panda
Professor,
Department of Chemistry,
Indian Institute of Technology, Hyderabad,
Telangana 502285, INDIA.






zoom.us Meeting View Edit Window Help

You are viewing Dr. Ravi K Kottalanka's screen

Anandarup Go... avadhani

Recording

INVITED SPEAKER PROFILE



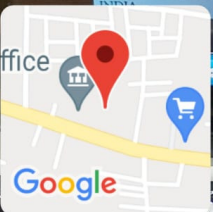
Dr. Tarun Kanti Panda is currently working as a professor in Department of Chemistry, Indian Institute of Technology Hyderabad.

Contribution towards Polymers:

- Dr. T. K. Panda's Research group significantly contributed towards the development of biodegradable polymers by using earth-abundant metal complexes as an initiators for ring-opening polymerization studies.
- Currently he is handling the DST-SERB sponsored CRG project entitled with "Highly Selective Ring-Opening Polymerization of Cyclic Esters Catalyzed By Alkali Metal Complexes Leading To Biodegradable Polymer"

Dr. Tarun Kanti Panda
Professor
Department of Chemistry
Indian Institute of Technology Hyderabad
Telangana, Sangareddy 502285

Worth of 65 Lakh



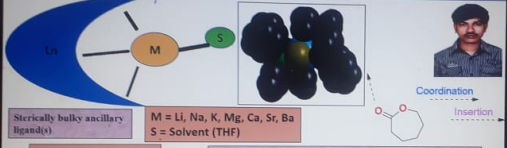
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Guntur Road, Amaravathi yards, Ponduranga Pet, Tenali, Andhra Pradesh 522201, India
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Zoom Meeting

Recording

Desikan Prof. Tarun Panda Dr. Ravi K Kottalanka Rathu Setty

Why Alkali and Alkaline earth (Ae) Metal as catalyst?



M = Li, Na, K, Mg, Ca, Sr, Ba
S = Solvent (THF)

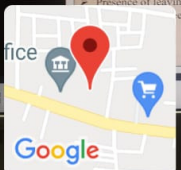
Catalyst Should contain

- Electropositive metal center such as alkali/Ae metal based achiral Catalyst.
- Spectator ligand with metal such as N-P-E moiety.
- Presence of leaving group.

Monomer approaches towards vacant coordination site of metal initiator and facilitate the initiator-LA interaction which enhanced the ROP of LA and may then react with X that drove the propagation step

- Abundant in Earth
- Less Explored
- Non Toxic

Coordination
Insertion



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Guntur Road, Amaravathi yards, Ponduranga Pet, Tenali, Andhra Pradesh 522201, India
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Participants (21)

Desikan (Me)

Dr. Ravi K Kottalanka (Host)

Prof. Tarun Panda (Co-host)

avadhani (Co-host)

17271R0077 N.Suresh Kumar

201FA 16003

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A. P. Pawar

A.S.Sadhana

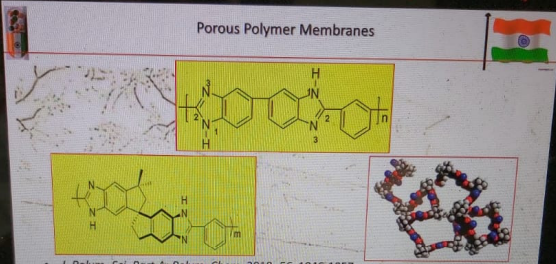
Abhishek Karjilal

ABS-105-I PUTU TUDY INDRANA

KARRI LAVAN... Mohamed Na... Dr. Kingshuk D... L. DEVARAJ S... Amsaveni A Tojiam Suma...

Recording

Porous Polymer Membranes



- *J. Polym. Sci. Part A: Polym. Chem.* 2018, 56, 1046-1057
- *J. Phys. Chem. C* (2019) 123, 9661-9672
- Porous polybenzimidazole as separator for lithium ion batteries

Vikas Kumar, Swaminathan Sivaram, Ver Avadhani Chilukuri.
Application No.:201711017734, 3/6/2017; WO 2018/163203 AI

- Synthesis of 2,2',3,3'-tetrahydro-3,3',3'-tetramethyl-1,1'-Spiro[1,1H-indene] 5,5',6,6'-tetramine, method of polymerization and use.

Vikas Kumar, Swaminathan Sivaram, Ver Avadhani Chilukuri.
Application No.:201711017734, 3/6/2017; WO 2018/163203 AI

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