

Department of Chemistry 2020-21

International Webinar on Smart Functional Materials

Department of chemistry in association with IQAC organized an international webinar on **SMART FUNCTIONAL MATERIALS** on August 21, 2020 in Googlemeet. The webinar aims at introducing the flavour of material chemistry to the students and updating the academic communities with the current advancement in this area. Students, faculties from this college as well as other colleges, research scholars actively participated in this webinar.

There were two speakers Dr. Sreejith Mangalath, Georgia Institute of Technology, USA. He gave an introduction about the Two-Dimensional Nanomaterials, which is a new class of materials with atomic- to nanoscale thicknesses and have unique physical and chemical properties, due to which they are considered to have great potential for applications in various fields such as energy, electronics, sensors, and biotechnology. Utilization of these nanomaterials for biosensing and therapeutic applications was also discussed. Second talk was given by Dr. Sreejith Shankar, NIIST Thiruvananthapuram on smart Materials. This webinar intended to explore a brief history of smart materials, advancements made in the field as well as the sustainable and futuristic applications of such materials in addition to R&D activities, and opportunities and challenges in this exciting field. It was inaugurated by our principal Dr. Krishnankutty K.



**International webinar on
SMART FUNCTIONAL MATERIALS**

**August 21, 2020
Time : 9.30 - 11.30 am**

Organized by
DEPARTMENT OF CHEMISTRY
Government College Kariavattom
Thiruvananthapuram



For registration
https://docs.google.com/forms/d/e/1FAIpQLSd4T45ZaZLxUW-BSETEjdd5pd0bKbzHQn9NYBYeKZCnbCDA/viewform?usp=sf_link
E-certificates will be provided
Online platform

Participants will be contacted by
email with the link of admission



The Department of Chemistry, Government College Kariavattom is organizing an international webinar on smart functional materials. The webinar aims at introducing the flavour of material chemistry to the students and updating the academic communities with the current advancement in this area. We cordially invite the faculty members, students, research scholars to join this webinar.

Dr. Krishnankutty K.
(Principal)

Dr. Bijitha B.
Coordinator

Dr. Santhosh S.
(Head of Dept)

Organizing Committee members

Dr. Sreekala G.
Dr. Asha A.
Smt. Asha S.
Sri. Sudheer B.
Smt. Lekshmy R. K.

PROGRAMME

Welcome	: Dr. Sreekala G.
Inauguration	: Dr. Krishnankutty K. (Principal)
Felicitations	: Dr. Sabreen H. M. (IQAC Coordinator)
Speaker Introduction:	
Session 1	: Dr. Asha A
Session 2	: Smt. Asha S
Vote of Thanks	: Smt. Lekshmy R. K.

SPEAKERS


**Session 1
9.30 -10.30 am**



Dr. Sreejith Mangalath
Georgia Institute of Technology, Atlanta, USA

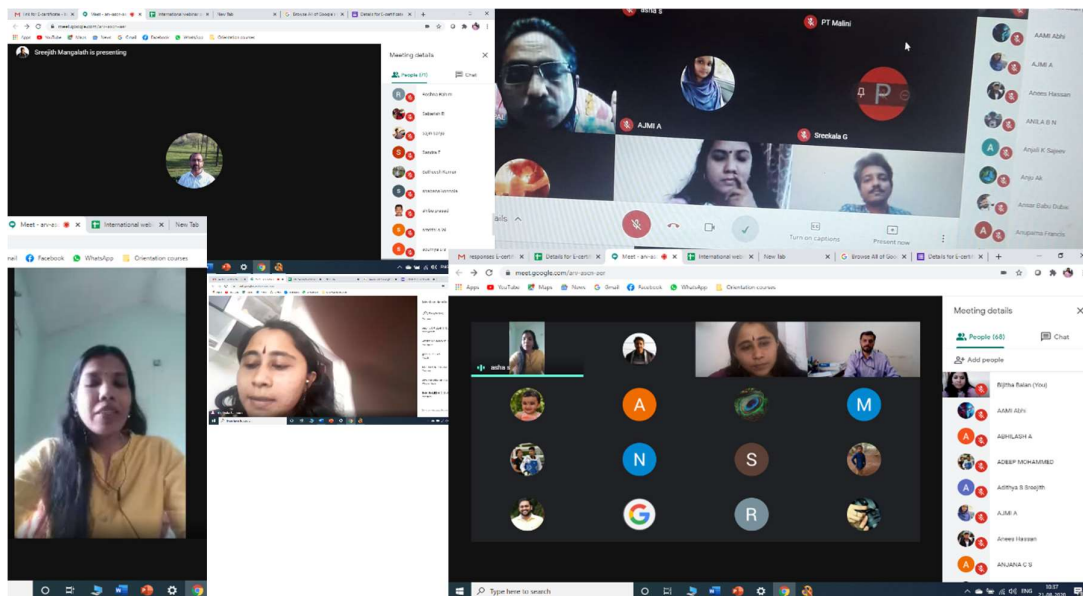
Topic: An Introduction to Two-Dimensional Nanomaterials
(2D) nanomaterials, a new class of materials with atomic to nanoscale thicknesses have unique physical and chemical properties, due to which they are considered to have great potential for applications in various fields such as energy, electronics, sensors, and biotechnology. An overview of important 2D nanomaterials such as graphene and its chemical analogues, highlighting their properties, synthesis, characterization techniques and potential applications in various fields are given in this talk. Utilization of these nanomaterials for biosensing and therapeutic applications will also be discussed.

**Session 2
10.30 -11.30 am**



Dr. Sreejith Shankar
National Institute for Interdisciplinary Science and Technology
Thiruvananthapuram

Topic: Smart Materials – Futuristic Roads towards Sustainability
Stimuli-induced control and modulation of the functional properties of materials has revolutionized the concept of 'smart nanotechnology'. The applications of smart materials range from color changing photochromic glasses to electrically stimulated dynamic electrochromic windows on the Boeing Dreamliner aircraft and shape memory alloys that remember their original shape even after mechanical deformation. This webinar intends to explore a brief history of smart materials, advancements made in the field as well as the sustainable and futuristic applications of such materials in addition to our own R&D activities, and opportunities and challenges in this exciting field.



Session 1-An introduction to 2D Nanomaterials

Graphene-History

- ✓ Single layer of carbon atoms forming a honeycomb lattice
- ✓ First isolation in 2004 using adhesive tape
- ✓ Nobel Prize in Physics 2010

Konstantin Novoselov Andre Geim
University of Manchester

I. Hargittai, Struct. Chem., 2010, 21, 1151-1154

Dr. Sreejith Mangalath
Georgia Institute of Technology, Atlanta, USA

Session 2 -Smart Materials: Futuristic road towards sustainability

Chromogenic Materials

- Photochromism
- Thermochromism
- Electrochromism
- Halochromism
- Solvatochromism
- Mechanochromism

Dr. Sreejith Shankar
NIIST (CSIR), Thiruvananthapuram