

International Webinar Series on 'Food, Chemical and Nanomaterials Toxicity'



Program
Date : 26th November 2020

9.00am :

Welcome
(5 minutes)

Dr. P.V. Mohanan
SCTIMST, Organizing Secretary

Introduction about Webinar
(5 minutes)

Prof. (Dr.) G.M. Nair
President
Kerala Academy of Sciences

Presidential address

Prof. (Dr.) H. Venkateshwarlu
Hon'ble Vice Chancellor
Central University of Kerala

Inaugural address

Prof. (Dr.) K. Jayakumar
Director, SCTIMST

Special Remarks
(5 minutes)

Dr. P.R. Harikrishna Varma
Head, BMT Wing, SCTIMST

Vote of thanks
(5 minutes)

Prof. (Dr.) D. Govinda Rao
Dean SBS, CU Kerala

Prof. (Dr.) Sudha Kappalli
CU Kerala, Organizing Secretary





International Webinar Series on

'Food, Chemical and Nanomaterials Toxicity'

November 26-28, 2020

Schedule of Webinar Series

26 th November 2020, Thursday			
9.00am to 9.30am	Inauguration		
9.45am to 10.45am	The zebrafish as a biomedical model to define developmental origins of chemical toxicity		Prof. Jennifer L. Freeman Purdue University, USA
10.45am to 11.45am	One dimensional semiconducting nanomaterials: Toxicity and clinical applications		Prof. Oomman K. Varghese, University of Houston, USA
Lunch Break			
2.00pm to 3.00pm	Toxicology of pharmaceutical products during drug development		Prof. Bikash Medhi Postgraduate Institute of Medical Education & Research, Chandigarh, India
3.00pm to 4 pm	Influence of the stability and of the reactivity of ZnO nanoparticles on their toxicity		Prof. Raphaël Schneider Université de Lorraine, France
4.0 pm to 5.00 pm	A macroporous cryogel-based systems for water treatment applications: nanocomposite based cryogels and bacteria-based bioreactors		Dr. Irina Savina University of Brighton, UK
27 th November 2020, Friday			
11.00am to 12.00 noon	Theragnostics nanomaterials against cancer		Prof. Sakthi Kumar. D Bio Nano electronics Research center, Toyo University, Japan
12.00 noon to 1.00pm	New strategies for mitigating nanomaterials toxicity & enhancing		Dr. Neetu Singh Indian Institute of Technology ,New Delhi, India
Lunch Break			
2.00pm to 3.00pm	Natural products as regulators of tumour suppressor genes		Dr. Debasmita P. Alone National Institute of Science Education and Research, Odisha, India
3.00pm to 4pm	Hyaluronic Acid based Nanotechnologies: target delivery of nucleic acids to CD44pos cancer cells		Dr. Annalisa Tirella The University of Manchester, UK
28 th November 2020, Saturday			
9.30am to 10.30am	Prospects of nanomaterials in biomedical applications		Dr. Pratima Solanki Jawaharlal Nehru University, New Delhi, India
10.30am to 11.30am	Cardiovascular safety assessment of New Chemical Entities (NCEs)		Prof. Shyam S. Sharma National Institute of Pharmaceutical Education and Research, Mohali, India
11.30am to 12.30pm	Food - risk assessment		Prof. Prathap Kumar Shetty. H Pondicherry University, India
12.30pm to 1.00pm	Valedictory address		

Chairman Dr. P.R. HariKrishna Varma

Co-Chair Prof. Govinda Rao D

Organizing Secretaries

Dr. Sudha K, CUK (sudhakappalli@cukerala.ac.in)

Dr. Mohanan PV, SCTIMST (mohananzpv10@gmail.com)

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Report

International webinar series on 'Food, Chemicals and Nanomaterials Toxicity' 26 to 28 November 2020

Seminar on Research Methodology

The **International webinar series on 'Food, Chemicals and Nanomaterials Toxicity'** organized by Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Trivandrum, Central University of Kerala, Kasargod in association with the Kerala Academy of Sciences opened a limitless opportunity to understand the current research trends in the frontier area of nanotechnology and their applications. The three day International Webinar series held from 26th to 28th November 2020 started with the inaugural function presided over by Prof. H. Venkateshwarlu, Hon. Vice Chancellor, Central University of Kerala (CUK). Prof. K. Jayakumar, Director of SCTIMST, inaugurated the webinar series. Organizing secretary Dr. P.V. Mohanan, Scientist G & Head of Toxicology Division, SCTIMST welcomed the gathering. Prof. G. M. Nair, President of Kerala Academy of Sciences delivered a short introduction about the webinar. Dr. P.R Harikrishna Varma, Head of the Biomedical Technology Wing, SCTIMST and Prof. D. Govinda Rao, Dean of Central university of Kerala offered greetings to the webinar series. Prof. Sudha. K, organizing secretary from CUK delivered the word of thanks.

12 eminent speakers from leading institutes like Purdue University, USA; University of Houston, USA; Postgraduate Institute of Medical Education and research (PGIMER) Chandigarh; University of Lorraine, France; University of Brighton, UK; Toyo University, Japan; Indian Institute of Technology, New Delhi; National Institute of Science Education and Research, Odisha; The University of Manchester, UK; Jawaharlal Nehru University, New Delhi; National Institute of Pharmaceutical Education and Research, Mohali and Pondicherry University delivered their lectures on various aspects. The brain storming sessions ignited new research possibilities in different levels and strategies of biomedical applications. Around 420 registered participants attended the lectures. The webinar was also broadcasted live (facebook and youtube) to ensure the reach to a wide audience.

The first day of the seminar covered five lectures. The first lecture was delivered by Prof. Jennifer L. Freeman Purdue University, USA, entitled 'The zebrafish as a biomedical model to define developmental origins of chemical toxicity', discussed the importance of zebra fish to study the toxicity of nanoparticle based systems. Prof. Oomman K. Varghese from University of Houston, USA elaborately discussed the Toxicity and clinical applications of one-dimensional semiconducting nanomaterials. The importance of Toxicology of pharmaceutical products during drug development was highlighted by Prof. Bikash Medhi, Postgraduate Institute of Medical Education & Research, Chandigarh, India. In the context of increasing industrial applications of Zinc oxide nanoparticles, Prof. Raphaël Schneider from University of Lorraine, France; focused the influence of the stability and of the reactivity of ZnO nanoparticles on their toxicity. The last lecture of the day entitled 'A macroporous cryogel-based systems for water treatment applications a nanocomposite based cryogels and bacteria-based bioreactors' by Dr. Irina Savina

University of Brighton, UK emphasized the use of macroporous cryogels for the treatment of water.

Second day of the webinar series had scheduled four lectures and started with Prof. Sakthi Kumar D, Bio-Nano Electronics Research Center, Toyo University, Japan. He outlined the importance of Theragnostics nanomaterials against cancer followed by the talk by Dr. Neetu Singh Indian Institute of Technology, New Delhi, India. She highlighted the new strategies for mitigating nanomaterials toxicity and enhancing bioactivity. The afternoon sessions commenced with the lecture by Dr. Debasmita P. Alone from National Institute of Science Education and Research, Odisha, India. The use of natural products as regulators of tumour suppressor genes was interestingly outlined, showing the importance of various of natural products like artemisinin in cancer pharmacology and the use of drosophila as biological model to study the toxicity. The last speaker of the day was from The University of Manchester, UK. Dr. Annalisa Tirella discussed the aspect of Hyaluronic Acid based Nanotechnologies: target delivery of nucleic acids to CD44pos cancer cells. She also discussed the production of nanoparticles via microfluidic system.

The last day of the webinar had three lectures and started with Dr. Pratima Solanki Jawaharlal Nehru University, New Delhi, India discussing the Prospects of nanomaterials in biomedical applications. Prof. Shyam S. Sharma from National Institute of Pharmaceutical Education and Research, Mohali, India outlined the Cardiovascular safety assessment of New Chemical Entities (NCEs). He summarized that the major role of safety pharmacological system in the introduction of new technologies that offer improved ability to study new compounds. The final speaker of the series was Prof. Prathap Kumar Shetty H from Pondicherry University, India. Dr. Shetty portrayed the importance Food - risk assessment. The risk analysis and risk management of the food products were discussed in detail.

The closing ceremony of the webinar series was inaugurated by Prof. Suresh Das, former Director, NIIST, Emeritus Professor. On his valedictory address he shared a thought provoking discussion on the roles of scientists in the society. Prof. Sudha. K, Head, Department of Zoology, CUK gave the welcome address. Prof. G. M. Nair, President of Kerala Academy of Sciences and Dr. P.R Harikrishna Varma, Head of the Biomedical Technology Wing, SCTIMST addressed the gathering. Dr. P. V. Mohanan, Scientist G & Head of Toxicology Division, SCTIMST, thanked the invited guests, speakers and all other participants. The webinar was concluded with national anthem.

Outcomes

Nanotechnology has rapidly emerged into the mainstream of scientific research and stimulated an unsettling interdisciplinary research in terms of technological applications and consumer products. The nanoparticles find wide-range of applications in biological, physical and chemical systems. The field of nanotechnology is expanding in its maximum potential going from biomedicine, pollution control, energy and sensing, food etc., etc., In the last few decades, nanoparticles have been the center of attraction for the development of many drug delivery systems.

- The International webinar provided an ideal platform to stimulate ideas and establish collaborations for promoting nanotechnology for the greater benefit of the society as well as to develop an interest among young researchers.

- The webinar provided a platform for the exchange of ideas from the experts in the field of nanotechnology and also an out and out knowledge on the toxicity and risk assessment in the food, chemical and nanomaterials applications.
- The role of nanotechnology in improving health care was also emphasized in the lectures. The theme of the webinar apprehended the toxicological perspective of nanomaterials and significance of bio-nano interactions.
- The lectures highlighted the safety concerns associated with nanomaterials used in healthcare applications, water-treatment, food and chemical applications. The webinar captured the toxicity aspects of nanomaterials to emphasize the importance of the interactions of nanomaterials and the living system. Also the series provided a better approach to entangle the importance of toxicity evaluation in food, chemical and nanomaterial applications.
- It provided a couple of cautious information among audience while handling and incorporating nanomaterials and their derivatives in different application fields; including biomedical, industrial as well as environmental platforms.
- Also it was a great success in creating awareness among scientific community regarding the newer trends and technological possibilities in bringing more fruitful scientific contributions to the society.

Dr. Mohanan P.V
Scientist-G & Head, Toxicology Division,
SCTIMST, Trivandrum

Dr. Sudha K
Professor & Head,
Dept. of Zoology
CUK, Kasargod

Organizing Secretaries

1st December 2020