

प्रोफेसर नवीन खरे

विभागाध्यक्ष, रसायन शास्त्र विभाग

Prof. Naveen Khare

Head, Department of Chemistry

लखनऊ विश्वविद्यालय
लखनऊ 226007(उ.प्र.)भारत
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Convener Report: International E-Seminar, Chemistry Department, University of Lucknow. June 25 & 26, 2020

The two days International E-Seminar was organized by Department of Chemistry, University of Lucknow, Lucknow on June 25-26, 2020. The E-Seminar organized with the objective "**Chemistry, Biology and COVID-19**", was inaugurated on 25 June 2020 at Zoom Cloud Meeting App, a digital platform in line which follows the social distancing norms due to covid-19 pandemic. The program was presided by Prof. Alok Kumar Rai, the Vice Chancellor as well as patron of the e-seminar event, University of Lucknow, Lucknow. He addressed the audience to overcome new challenges and define a "new dimension" in dealing with the situations arising out of COVID-19.

Prof. Naveen Khare, Convener of the International E-Seminar event and Head of the Chemistry Department, University of Lucknow, Lucknow welcomed the 14 renowned speakers (from Japan, Australia, France, Germany, Netherlands, Ireland, South Africa and USA in which four from India viz. IIT, Mumbai, KGMU, CSIR-IITR and University of Lucknow) and more than 400 participants present online on Zoom cloud app from India and abroad (like specialists, directors, professors, faculties, experts and research fellows and students from reputed research institutes, universities and companies, association & societies). Prof. Khare welcome the speakers and participants and highlighted the importance of accelerating the scientific discoveries in the field of Chemistry, Biology and Covid-19.

The International E-Seminar was brought together with established and emerging researchers, scientists, technologists and industrialists to serve as a forum for deliberation and discussions on the progress in all major areas of "**Chemistry, Biology and COVID-19**".

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The following lectures were delivered in Day 1 (25 June 2020):



“**Heparan sulfate mimetics as antiviral agents for COVID-19**” delivered by **Prof. Vito Ferro**, Deputy Director, Biotechnology Program, School of Chemistry and Molecular Biosciences, Australian Infectious Diseases Research Centre, The University of Queensland, Brisbane, Australia. **Prof. Ferro** spoke about the carbohydrate chemistry and medicinal chemistry with a focus on the synthesis of compounds to probe and/or inhibit carbohydrate-protein interactions involved in disease processes.

<https://youtu.be/1J1NWVdXEt4>



“**Precipitation-Free High-Affinity Multivalent Lectin Binding**” lecture delivered by **Prof. Valentin Wittmann**, Fachbereich Chemie, Universitaet Konstanz, Konstanz, Germany. He talked about the Chemical biology of carbohydrates, metabolic glycoengineering, investigation of multivalent carbohydrate-protein interactions, development of ligation reactions, glycopeptide synthesis, RNA-targeting antibiotics.

<https://youtu.be/cX6ji-7C5EI>



The lecture on “**Protein–Carbohydrate Interactions and Disease**” was delivered by **Prof. Roland Pieters** Department of Chemical Biology & Drug Discovery, Utrecht Institute for Pharmaceutical Sciences, Utrecht University, The Netherlands. His current research interests on Chemical Biology and Drug Discovery are directed towards glycodrugs, by studying the interference with protein-carbohydrate interactions using multivalent systems of varying architectures including those with rigid spacers, for targets such as viral and bacterial adhesion proteins and toxins, galectins and glycosidases.

<https://youtu.be/SuxPnRTUyNA>



“**Synthesis of Iminosugars and Potential as Anti-viral Agents**” was delivered by **Prof. Paul Murphy**, Department of Chemistry, National University of Ireland, Galway, Ireland. Prof. Murphy research interests are in the design, synthesis and evaluation of bioactive molecules, including natural products. A major current interest is in the design and synthesis of glycomimetics to develop the inhibitors of carbohydrate binding proteins such as galectins, macrophage galactose C-type lectin, siglecs and carbohydrate binding proteins involved in infection. All of these targets are relevant to development of new therapeutics, vaccines or diagnostics for diseases.

<https://youtu.be/dNT7rxhcj1g>

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“A fully stereoselective method for **-sialylation**” was delivered by **Prof. Hiromune Ando**, Institute for Glyco-core Research (iGCORE), Center for Highly Advanced Integration of Nano and Life Sciences (G-CHAIN) Gifu University, Japan. **Prof. Ando** does research in Medicinal Chemistry and Organic Chemistry. His most recent publication is 'Synthesis of Core Oligosaccharides of Lipooligosaccharides from Campylobacter jejuni: A Putative Cause of Guillain–Barré Syndrome'.

<https://youtu.be/a0cdYJHbh90>



Sugar mimesis.

A lecture on “**Selectively modified Cyclodextrin for bio inspired applications**” was given by **Prof. Matthieu Sollogoub**, Sorbonne Université, Institut Parisien de Chimie Moléculaire UMR CNRS, Paris, France. He talked about the Organic, Biological and Supramolecular Glycochemistry. His current Research is on Regioselective functionalization of cyclodextrins, Catalysis with confined metal complexes, Supramolecular hierarchical assemblies,

<https://youtu.be/RmAMCCEvAN8>



Prof. Anil Mishra gave a popular lecture on Covid19 “**Chemistry of overcoming the Covid19 stress**”. Prof. Anil Mishra is a faculty in Chemistry Department, University of Lucknow. His research interests are in NMR Spectroscopy, Nucleoside Chemistry and Computational chemistry. He is also man of computer knowledge as his amateur hobby though he did not have any professional degree or diploma in it. He is also director of Computer Center, University of Lucknow and Coordinator of online Admissions of our University since last five years. Additionally, he gives popular lectures on happiness and stress management.

<https://youtu.be/SkmWY4QWF34>

The following lectures were delivered in Day 2 (26 June 2020):



A lecture on “**De Novo Asymmetric Synthesis of Oligosaccharides for Medicinal Chemistry**” was delivered by **Prof. George A. O'Doherty**, Department of Chemistry and Chemical Biology, Northeastern University, Boston, USA. He spoke on the use of asymmetric catalysis for the synthesis and medicinal chemistry study of biological important carbohydrate and natural products.

https://youtu.be/hC_mIC_wmkQ

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“**Antivirals: Medicinal Chemistry From Hit-to-Lead**” delivered by **Prof. Ashish K. Pathak**, Principal Scientist in Chemistry, Drug Discovery Division, Southern Research, Birmingham, AL, USA. He is also adjunct professor of University of Alabama, USA. His main research interests are medicinal chemistry approaches in the area of anti-infective and cancer, carbohydrates and saponins as immune stimulants, and vaccine adjuvants.

<https://youtu.be/WfPyZFRgMlc>



One lecture on “**Corona Pandemic what we need to know and practice**” was delivered by **Prof. Abhinav Sonkar**, Head, Department of General Surgery, King George Medical University, Lucknow on epidemiologists’ aspect. Prof. Abhinav is FRCS (England) FRCS (Ireland) FRCS(Glasgow). His specialization is Surgical Oncology (Head & Neck, Thyroid, Breast, Gastro intestinal, Soft tissue sarcoma).

<https://youtu.be/pxzZHvE0ZE4>



“**Chemistry and Covid 19 : Immunity Enhancement to Sustainability for Better Economy Amidst Challenges**” was delivered by **Prof. V.P. Sharma** is Fellow of Academy of Environmental Biology, India and member of other prestigious National/ International societies of repute. His area of expertise is Regulatory Toxicology. He has two patents to his credit, recipient of several awards/ distinctions, member of > 23 academic societies, resource persons for Universities, more than 12 book chapters and more than 105 publications/ reports. He has also received recognition for outstanding contribution as Expert in North East Student Conclave during India International Science Festival.

https://youtu.be/7N7ZtliZ_SQ



Prof. Suvarn Kulakrni, Department of Chemistry, IIT, Mumbai, India gave an interesting lecture on “**Expeditious synthesis of bacterial glycans**”. His research is focused on synthesis of biologically important carbohydrates. Cell surface oligosaccharides and glycoconjugates are involved in numerous vital life processes such as viral and bacterial infections, cell growth and proliferation, cell-cell communication, and immune-response and are thus implicated in various disease states.

<https://youtu.be/GjlHyUT573k>

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“Reflections of a Chemist during a pandemic” was delivered by **Prof. David W. Gammon**, Department of Chemistry, University of Cape Town, South Africa. His positions at University of Cape Town have combined his interests in research and teaching in chemistry, with broader interests in facilitating effective learning in the Sciences, and the challenges of transforming spaces and minds at University of Cape Town and beyond. He is a recipient of the UCT Distinguished Teacher Award. His current research focuses on the synthetic and medicinal chemistry of carbohydrates and plant natural products, and he is the South African representative to the International Carbohydrate Organization.

<https://youtu.be/zHbFl0aKvxc>



Another popular lecture was delivered by **Prof. Naveen Khare**, Head, Department of Chemistry, University of Lucknow, Lucknow on “**Preparing for higher education in COVID-19**” specially addressed to students of UG, PG and Ph.D. His research is focused on Synthetic Carbohydrate chemistry and Natural Product Chemistry. He is also President of Association of Carbohydrate Chemists & Technologists, India (ACCTI).

<https://youtu.be/iprXMNOaiv8>

Finally, the following conclusions and recommendations were made at the end of the two-day International E-Seminar signifies on the role that we as chemists and biologists play in fighting this pandemic, strategies for drug and vaccine development. And we also learned how to communicate with our chemistry in a creative and engaging way. At the end, Prof. Naveen Khare, Convener of the E-Seminar event as well as Head of the Chemistry Department, University of Lucknow, proposed the vote of thanks, and ended the International E-Seminar event with a great success.



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