NTNU
Norwegian University of Science and Technology

Nano – Syn – Sens Kick Off Meeting

Date: 17th December 2020, Thursday

Time: 10:00 – 12:30 CET

Zoom Meeting (Link in separate email)

Time	Topic	Speaker
10:00 - 10:10	Introduction and Welcome	Dr. Sulalit Bandyopadhyay, Department of Chemical Engineering, NTNU
10:10 - 10:20	Address from Dean, Global Engagement, IIT-M Address from Head of the Department, Department of Chemical Engineering, IIT-M	Prof. Raghunathan Rengasamy, Dean, Global Engagement, IIT -M Prof. R. Nagarajan, Head of the Department, Department of Chemical Engineering, IIT-M
10:20 - 10:35	Overview of Research at Polymer Engineering & Colloid Sciences (PECS) group	Prof. Abhijit Deshpande, Department of Chemical Engineering, IIT-M
10:35 - 10:45	News and Views from Research Council of Norway.	Cecilie Anita Mathiesen, Senior Adviser, Research Council of Norway
10:45 - 10:55	Particle Engineering Research at Department of Chemical Engineering, NTNU	Prof. Jens-Petter Andreassen, Head of the Department, Department of Chemical Engineering, NTNU
10:55 - 11:10	Controlled Synthesis of Nanomaterials in Flow Reactors	Prof. John Christian De Mello, Department of Chemistry, NTNU and Head of NTNU Nano
11:10 - 11:25	Experiments and Simulations of Growth of Anisotropic Au NPs	Karthik Raghunathan, PhD Candidate, Department of Chemical Engineering, NTNU
11:25 - 11:40	Fiber Optic Probes for Efficient Plasmonic Sensing.	Assoc. Prof. V V Raghavendra Sai, Department of Applied Mechanics, IIT - M
11:40 - 11:50	Adsorption of Surfactants and Proteins on Gold surface: MD Studies	Assoc. Prof. Ethayaraja Mani, Department of Chemical Engineering, IIT-M

11:50 - 12:10	Progess on Synthesis of non-spherical Au NP	Tina Bruns, MSc Student in Chemistry Helena Ramsvik, MSc Student in Biophysics Katharina Zürbes, PhD Candidate, Department of Chemical Engineering, NTNU
12:10 - 12:30	Networking & Discussion	All

Project Description:

Funding Organizations: Research Council of Norway and Department of Science and Technology, India.

Funding Program (Norway): NANO 2021

Lipopolysaccharides (LPS), found in the outer membrane of the Gram-negative bacteria, can cause endotoxemia, septic shock and multi-organ failure in humans, even at sub nano-molar levels. Currently, there is no reliable sensor for detection of LPS in blood and biopharmaceuticals. Au NPs can potentially allow us to meet this need.

Here, we aim to understand and control growth of anisotropic Au NPs in seeded-growth strategies employing binary surfactant mixtures using a complementary approach that combines experimental and multi-scale modelling techniques for both batch and continuous (microfluidic) processes. The obtained Au NPs will then be functionalized in order to realize ultrasensitive plasmonic sensors for endotoxin detection based on optical fibre technology