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NanoScience Technology Center

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NANOTECHNOLOGY SEMINAR SERIES



Nature-inspired Material Design for Combating SARS-CoV-2 and Superbugs

Current global pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is responsible for over 6.5 million deaths till now. In the last few decades there has been dramatic increment in antimicrobial resistance for pathogenic bacteria which constitutes to be a key threat for our society. All the above facts have triggered initiatives in this world for the development of novel antimicrobial compounds for targeted inhibition of virus and killing of superbugs. Nature has served mankind as a great source of inspiration by virtue of millions of well-coordinated engineered designs. Naturally produced host defense peptides by all living organisms are bioactive small proteins, which are important components for our innate immune system. Those peptides are the first-line defense against microbial attacks for our health. Here we will discuss our recent reports on the development of next generation antibacterial and antiviral nanocomposite material using nature inspired peptides, biochar, chitosan, etc. We will also discuss the combating mechanism via the interactions between the nanocomposite surface and cell wall, which will control the antimicrobial and antiviral processes.

Biography: Dr. Paresh Ray is a full Professor in the Department of Chemistry at Jackson State University, Jackson, MS. After completed his PhD from Indian Institute of Science Bangalore, India, he finished his postdoctoral fellowship in James Franck Institute at University of Chicago, and Department of Chemistry at Columbia University, NY. Next, he joined as scientist in the Plasma Technology Industry in Princeton, NJ, USA. After that he moved to academy and joined as tenure track assistant professor in the Department of Chemistry at Jackson State University, MS, USA, where he is now tenured full professor. The development of new scientific concepts and technologies, especially in emerging interdisciplinary fields, is the career goal of Dr. Paresh Ray. Dr. Ray's vision is to continue research at the interface of chemistry and biology. He has served as PI or co-PI for more than 20 grants from NSF, DOD, and NIH. During the last fifteen years of funding, he has published more than 120 papers (h index 65), with graduates, undergraduates and high school students. During this time, Dr. Ray has mentored 40 graduates (25 PhDs and 10 Master), 5 under graduates and 40 K12 students.

For further information please click link below:
<http://www.nanoscience.ucf.edu/news/events.php>

Paresh Chandra Ray Ph.D.

Department of Chemistry,
Physics, and Atmospheric
Sciences

Jackson State University
Jackson, Mississippi

**Thursday
November 3, 2022**

11:30AM – 1:00PM

**Research 1
Room 101**

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