



Popular Science Lecture

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Sacred Heart College (Autonomous), Thevara, Kochi - 682013

Lecture on

**"Innovative Nano-biomaterials for Controlled Drug
Delivery and Regenerative Engineering"**

by

Dr. Deepthy Menon

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Amrita Vishwa Vidyapeetham, AIMS-Kochi



Date and Time

Wednesday, September 17, 2025 (2.15 pm)

Venue:

Melesius Hall, Sacred Heart College (Autonomous), Thevara

All are cordially invited to attend



A B S T R A C T

“Innovative Nano-biomaterials for Controlled Drug Delivery and Regenerative Engineering”

Nanobiomaterials have received wide acclaim as potential drug delivery agents, wherein materials at the nanoscale range help to deliver diverse therapeutic agents (eg: chemotherapeutic agents, biological agents, immunotherapeutic agents) to target-specific sites for treating chronic human diseases. Through the judicious choice of nanomaterials, it is possible to fine tune drug release and alter the pharmacokinetic properties of the agents. Regenerative medicine on the other hand, applies the principles of engineering and life sciences to deal with the regeneration or replacement of damaged or diseased tissues and organs. Regeneration of a tissue/organ is a very complex process and often requires the combination of several strategies, such as the development of multifunctional scaffolds, the delivery of growth factors or other biochemical signals, etc. Research in tissue repair and regeneration has also benefitted remarkably through the use of nanomaterials and the prospects of this field are enormous. Thus, innovative biomaterials engineered at the nanoscale have emerged for precise and smart functions in medicine. This talk would provide an overview of the characteristics and advantages of nanomaterials, with certain specific applications in medicine.