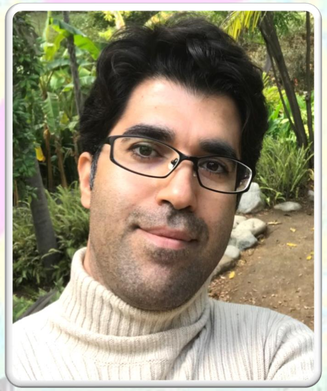
ACCMS-Global Research Center
SRMIST, Chennai India

Webinar #32



Dr. Samad Ahadian

Founder and CSO
NouBio Inc.
Los Angeles, California, USA

Title: Nanomaterials and Microscale Technologies to Engineer Muscle Tissues

Registration link: ***https://tinyurl.com/ycyz9drc***

**Zoom details will be shared with the registered participants*

October 29th 2024,
11.30 am – 1.00 pm
Indian Standard Time

Short biography

Dr. Samad Ahadian is a renowned scientist and entrepreneur, recognized for his contributions to bioengineering, biomaterials, and tissue engineering. As a former Assistant Professor at the Terasaki Institute for Biomedical Innovation, he focused on developing technologies to improve human health, particularly in tissue engineering, regenerative medicine, and lab-on-a-chip systems for diagnostics and drug screening. These innovations aim to replicate physiological conditions in microenvironments, enabling more precise diagnostics, drug screening, and therapeutic applications. Dr. Ahadian earned his Ph.D. in Materials Science at Tohoku University under the supervision of Professor Yoshiyuki Kawazoe. His leadership has led to partnerships with major industry players like Thermo Fisher Scientific, further validating the commercial viability of his innovations. Recognized globally for his contributions, Dr. Ahadian has earned a place among the Top 2% Most Influential Scientists in the world, a testament to his h-index of 58 and over 11,100 citations. In parallel to his academic work, Dr. Ahadian is the Founder and Chief Scientific Officer (CSO) of NouBio Inc. Under his leadership, NouBio has pioneered a synthetic alternative to animal serum, known as NouSerum, which is transforming cell culture processes. This breakthrough holds immense potential for accelerating research and production in areas like vaccines, regenerative medicine, and cell-based food technologies.

Abstract

Engineering functional muscle tissues holds immense potential for regenerative medicine, drug testing, disease modeling, and cell-based foods. However, replicating the complex structure and biomechanical properties of native muscle tissue remains a significant challenge. In recent years, the integration of nanomaterials and microscale technologies has emerged as a promising approach to overcome these obstacles. This work presents an overview of cutting-edge strategies using nanomaterials, including carbon nanotubes and graphene, to enhance the structural, electrical, and mechanical properties of engineered muscle tissues. By combining these materials with microscale technologies such as microfabrication and 3D bioprinting, we have developed advanced platforms capable of mimicking the cellular architecture and functional characteristics of natural muscle. These engineered tissues exhibit improved cell alignment, contractility, and electrical conductivity, crucial for the development of functional muscle constructs. This approach not only advances tissue engineering techniques but also paves the way for novel therapeutic and food applications, personalized medicine, and scalable manufacturing of muscle tissues for clinical and pharmaceutical purposes.

Panelist

Prof. Vannajan Sanghiran Lee,

Department of Chemistry, Center of Quantum Information Science and Technology (QIST)
University of Malaya
Malaysia

Convener:
Prof. Yoshiyuki Kawazoe
Head, ACCMS-GRC
SRMIST, KTR

Organizer
Dr. V.J.Surya
ACCMS-GRC Center-in-Charge
Dept. of Physics and Nanotechnology, SRMIST, KTR

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