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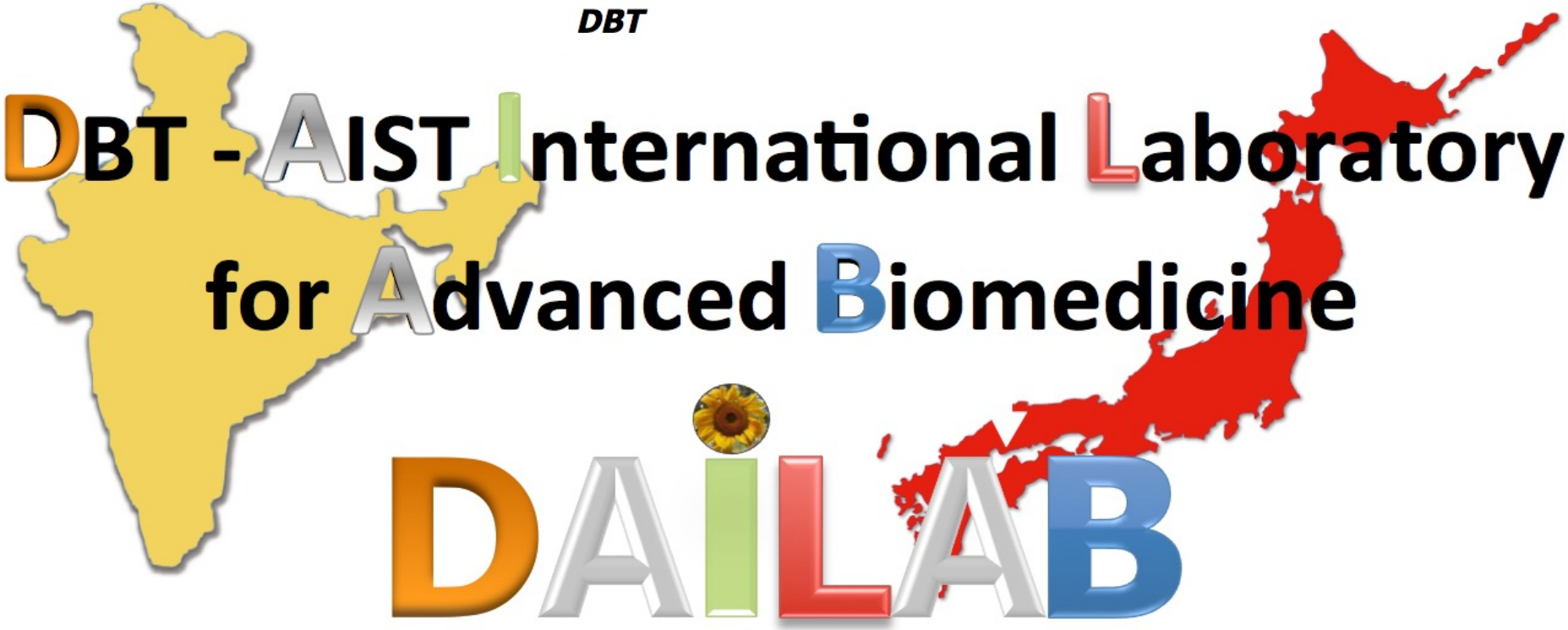

DBT - AIST International Laboratory for Advanced Biomedicine

DAILAB

Classroom for Advanced & Frontier Education

CAFE

DAiLAB-CAFE

Series - 64

Date & Time: June 1, 2021 (15:30- 16:30 JST)
Speaker: Anirban BANDYOPADHYAY
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A Journey from Nanobot to Drexler's Engines of Creation

Erik Drexler proposed in 1988, molecular machine-made engines would rule the world one day and bring fifth industrial revolution. Molecular machines are different from our day to day used cars, because Cars need a push by supplying an external energy. However, molecular machines harvest thermal energy kT, and only their directions need to be changed. Though single molecular motors are well established, engines made of multiple motors, sensors and automaton decision makers have not been conceptualized. We are the only group in the world developing such an engine for the last 10 years, used it for various purposes, from medicine for cancer and Alzheimer's to alternative energy harvesting. The adventurous journey will be articulated in this talk.

References:

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2. Ghosh S, Roy A, Singhania A, Chatterjee S, Swarnakar S, Fujita D, Bandyopadhyay A (2018) In-Vivo and In-Vitro Toxicity Test of Molecularly Engineered PCMS: A Potential Drug for Wireless Remote Controlled Treatment. *Toxicol Rep*. 5: 1044-1052 (2018), https://doi.org/10.1016/j.toxrep.2018.10.011.
3. Ghosh S, Chatterjee S, Roy A, Ray K, Swarnakar S, Fujita D, Bandyopadhyay A. (2015) Resonant Oscillation Language of a Futuristic Nano-Machine-Module: Eliminating Cancer Cells & Alzheimer Aβ Plaques. *Curr. Topic. Med. Chem*. 15: 534-541.

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