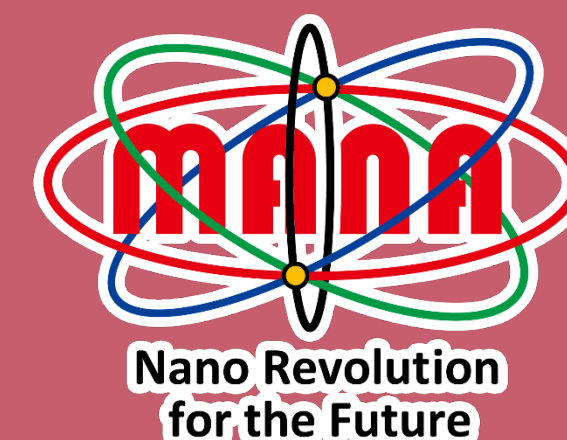


The 799th

MANA Seminar



Proactive design and synthesis of Luminogens for Smart Lightings

Prof. Sivakumar Vaidyanathan

(Indian Institute of Technology, Hyderabad, India)

Tuesday, June 24th 11:00 – 12:00

An acceleration in the global energy demand has pushed the usage of energy-saving smart devices and energy-efficient solid-state lighting (SSL). Smart white light-emitting diode (LED) technology is evolving at a fast pace (a way to solve the energy crisis), and its features continue to broaden its appeal and energy-saving impact. Proactive molecular design and engineering play a vital role in creating single-component white light emissive systems. It is still a challenge to achieve efficient white light emission with high color purity (based on the CIE diagram, an ideal white light system has $x = 0.33$, $y = 0.33$ to satisfy the NTSC standard value). In this context, we are developing new molecular materials (trivalent europium ion-based phosphors as red or single-component white light emissive systems/pure organic molecules) for LEDs. The details of the design strategy and synthesis of lanthanide-based phosphors (Zero concentration/thermal quenching) and organic fluorophores (HLCT-AIE//RTP) will be presented and discussed in the presentation.

Venue: Auditorium, 1F, WPI-MANA Bldg., Namiki

Chair: Dr. Takashi Nakanishi (Group Leader)

Inquiry: mana-seminar@ml.nims.go.jp