Professor Seeram Ramakrishna, *FREng*, *FBSE, Everest Chair* (*https://www.linkedin.com/in/seeram-ramakrishna/; https://blog.nus.edu.sg/seeram/*) is a recognized top researcher in Materials Science at the National University of Singapore (*https://academic.microsoft.com/institution/165932596/authors?f=Composite(F.FId%3D192562407*). He is also among the five leading researchers of Singapore (*http://www.webometrics.info/en/hlargerthan100; https://www.linkedin.com/pulse/all-afternoons-work-analysis-scientific-output-scientists-loh/?trackingId=trackingId237*). He is listed among the top three scientists of the world in Biomedical Engineering based on career-long impact of researchers or c-score (*https://drive.google.com/file/d/1bUJrvurVVBbxSl9eFZRSHFif7tt30-5U/view*). Thomson Reuters identified him among the World's Most Influential Scientific Minds. His Google Scholar shows over 123,000 citations, over 161 h-index, and over 1030 i10 index (*https://scholar.google.com.sg/citations?hl=en&user=a49NVmkAAAAJ&view_op=list_works&sortby=pubdate*). Clarivate Analytics recognized him among the Top 1% Highly Cited Researchers in the world in materials science as well as cross-fields categories. Microsoft Academic ranked him among the top 50 out of three million materials researchers worldwide based on saliency, publications, citations and h-index (*https://academic.microsoft.com/authors/192562407*). He received PhD from the University of Cambridge, UK. He is an elected Fellow of UK Royal Academy of Engineering (*FREng*); Singapore Academy of Engineering; Indian National Academy of Engineering; and ASEAN Academy of Engineering & Technology. He is also an elected Fellow of American Association of the Advancement of Science (AAAS); ASM International; American Society for Mechanical Engineers (ASME); American Institute for Medical & Biological Engineering (AIMBE); Institution of Mechanical Engineers, IMechE and Institution of Materials, Minerals & Mining, IoM3, UK; ISTE, India; and International Union of Biomaterials Science & Engineering (FBSE). He is senior member of IEEE. He co-authored books *An Introduction to Biomaterials Science & Engineering*; *Medical Devices- Standards, Regulations and Practices; Biomaterials- A Nano Approach*; and *An Introduction to Bio-composites*. He is the Biomaterials Section Editor of Elsevier Journal Current Opinion in Biomedical Engineering (*https://www.journals.elsevier.com/current-opinion-in-biomedical-engineering/editorial-board*). He is an editorial board member of Springer NATURE Scientific Reports, and BMC Biomedical Engineering (*https://www.x-mol.com/news/468727*). He is an Associate Editor of eScience journal (*http://www.keaipublishing.com/en/journals/escience/editorial-board/*). He is a plenary speaker at Euro BioMAT 2021 (*https://dgm.de/biomat/conference/plenary-speakers*). He teaches *Materials in Medicine* course to the graduate students.

Lecture Title: Intelligent Biomaterials

Abstract: The central role of science & technology in advancing healthcare of humans is evident from the ongoing mitigation measures implemented against the COVID19 pandemic, which infected 140 million people and caused three million deaths worldwide. Examples include rapid development of vaccines, range of diagnostic tools for screening of billions of people, facemasks, anti-viral surfaces, and point of care and remote monitoring of patients. Beyond the COVID19 pandemic, the demand for healthcare will accelerate due to stressful modern lifestyles, aging population, new diseases & ailments, unmet clinical needs, and growing demand for better healthcare worldwide. On this backdrop, the R&D investments in healthcare scientific research & innovation are expected to grow in the coming years and decades. Perhaps by 2050, humans will have access to intelligent biomaterials, devices, systems and methods to perceive own thoughts and redesign own mind! A glimpse of emerging future may be gleaned from the Neuralink (*https://www.neuralink.com/*), which recently announced a neural interface or in-brain device that could potentially solve neurological challenges from memory loss, hearing loss and vision loss to paralysis, depression and brain tissue damage. Moreover, with further research & innovation the brain-machine interface will enable humans to access and control external devices via thoughts. This lecture seeks to illustrate the emerging directions of intelligent biomaterials and systems thus enabling future healthcare and well-being. More effective antimicrobial and antiviral surfaces & treatments; tissue engineering & regenerative medicine; neural interfaces & neuro-prosthetics; wearables and personalised healthcare will be deliberated in this lecture.