ACCMS-Global Research Center
SRMIST, Chennai India

Webinar #15

Prof. Kwang-Ryeol Lee

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Title: Materials R&D Data Scheme and Standard Vocabulary

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Registration link: https://tinyurl.com/bden65vf

Biography

Prof. Kwang-Ryeol Lee has been leading diamond-like carbon (DLC) research group in KIST, South Korea since 1991. He has been investigating both fundamental aspects and industrial application of the DLC coating technology. He succeeded in the technology transfer to industry of DLC coating technology to VCR head drum, IC forming and trimming die, dental and micro-drill, various sliding tools, and water-oil separation technology. From 2001, his research was extended to the computational nano-science to understand atomistic or sub-atomistic phenomena of materials, like interfacial intermixing during thin film growth or surface nanostructure evolution by ion bombardment. He served for many international conferences in both thin film technology and computational materials science. His recent interest is to develop a web-based computational research platform to design nano-materials and devices. As of Jan 2023, he published about 470 papers with H index 54 (Google Scholar) and more than 60 patents. He received 4 times the Best Research Award of KIST in 1995, 1998, 2005, 2007, the Commendation of the Prime Minister of Korea in 2006, Two times of NanoKorea Award for Innovative Research in 2011 and 2016. His effort for building Nano Materials Design Platform was recognized by "2018 10 Nanotechnologies" award.

Abstract

Systematically structured materials research data is not only major R&D asset but core resource that empowers materials design capability by machine learning methods. It would be essential for efficiently retrieving the materials data from various sources to standardize the data keywords and specify the data type and unit of numeric data. Furthermore, materials design by machine learning necessitates the information of the relationship between materials properties and composition, structure or process conditions. Well-structured materials research data should be thus collected and managed to include this relationship. Committee for Materials Research Data in Korea suggested the materials data structure that can consistently manage the various materials research data. The concept of "materials system" was used for standard scheme of materials research data that can manage materials data of wide range of applications. Based on this data schema, the Committee published a dictionary of standard materials vocabulary.

Panelist

Prof. Gour Prasad Das

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Zoom meeting details will be shared with the registered participants

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