



**Eung-Sug Lee**

Honorary Researcher, Korea Institute of Machinery and Materials

Chief Technology Officer, ESPn Medic

**Title: A Study on Nanostructure Fabrication and Hybrid Specialty Film through the Nanoimprint Process**

**Abstract:**

Nanoimprint is one of our research strengths accumulated during the last twenty years. On its basis, metal nanopatterns for plasmonic applications were developed with the most accessible and reliable scheme to create various configurations such as protruded or embedded. Incidence driven photon plasmon resonance on metal dielectric interface is known to cause many interesting phenomenon because it naturally modify the rate of energy transition in optoelectronics . Along with the advance of metal plasmonic nanostructure fabrication, plasmonic applications have drawn wide-spread attentions in academic and industrial communities. In particular, metal pattern configuration is also significant variable in addition to size, height, density, and array to determine the plasmonic properties. Here the various process strategies and application researches for plasmonic nanostructuring in Korea Institute of Machinery & Materials(KIMM) will be presented. And also I will introduce the research results about hybrid specialty film developed by ESPnMedic.

**Biography:**

Eung-sug Lee was a vice president of KIMM (2014-2015) and a director of the department of nanomanufacturing technology of KIMM(2002-2008), and the director of Nano-convergence Industrial Liaison Center in KIMM(2016-2021), also a cross-appointed professor in the department of Mechanical Engineering of KAIST since 2010, Chungnam National University from 2002 to 2004. He used to serve as a director of Division of Nano & Convergence Technology in National Research Foundation of Korea(NRF) from 2009 to 2011.

He was a Japan-China-Korea MEMS/NEMS International Committee, NNT International Steering Committee (2010-present) and Symposium Chair of Nano Korea 2017 and 2018.

Now he is Member of The National Academy of Engineering of Korea (2011-present)

**Education and Work Experience:**

He was graduated from Seoul National University with Bachelor's and Master's degree in 1980 and 1982, respectively. He got Ph.D degree in KAIST in 1997. He is credited with more than 134 patents, and a contributing author of 47 SCI publications during the last fifteen years in the field of nanoimprint, plasmonic nanostructure, and various nanopattern-based optoelectronics. He played a key role of developing national research project in nanofabrication, especially nanoimprint in 2002. Dr. Lee, Eung-Sug has made a significant contribution for the development of nanotechnology in both research and policy fields. He has made remarkable research in nanoimprint lithography technology through University-Institute-Industry collaboration. Moreover he played a leading role in establishing networks of nano researchers and vitalizing nano communities.