

A quest to the designer's way: Innovative design using organic-inorganic polymer composite

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Abstract: There is a strong need to merge the mechanical properties and the design freedom of the polymer material in several applications. On way to the top position in electronic devices including the appliances and the mobile phones, Samsung has been focusing on how to deliver the emotional attractions to the valued customers on top of providing the technical gadgets. Therefore, the new concept to combine the role of the designer and the engineer became important to provide the artistic and the mechanical perspectives of the polymer materials. The designer's requests include the appealing color tone, better surface appearance, and metallic feeling while maintaining the mechanical strength to make the part thinner and tougher. The talk will cover how the designer's products have been developed in the IT markets and what kind of technical expertise has been utilized. Especially, the talk will focus on how the attractive surface appearance is developed and how the anti-mar and the anti-scratch characteristics are improved with the organic-inorganic hybrid system. The organic-inorganic hybrid composite is now being further extended to OLED. The flexible substrate is designed to enhance the design capability and the barrier film is developed to protect the key components of the OLED device from moisture and oxygen.

Biography: Dr. Kim is currently a research specialist in Corporate R&D of Samsung Cheil Industries Inc. He served as executive vice president of the company from 2004 to 2011. Prior to joining Samsung Cheil Industries, Dr. Kim served as a principal scientist at Bayer (2002-2004) and as associate R&D scientist of Bayer & Monsanto (1992-2001). Dr. Kim received B.S. in chemical engineering from Yonsei University (1980), M.S. in chemical engineering from KAIST (1982), Ph.D. in chemical engineering from Lehigh University (1992), and MBA from Western New England College (2001).

