Innovating the Development of Engineered Micro- and Nanostructures

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What is the role of innovation in materials research? The more advanced the materials are and the greater the complexity of their applications, the more challenging is the manipulation or engineering of their structures, and thus their properties, at the micro- and nanoscale. Consequently, innovation plays an increasingly vital role in materials development – from design and synthesis to scale-up and manufacturing. Many of 3M products, from light management films to touch displays, have large surfaces, and creating tiny precisely-shaped structures of functional materials on these surfaces give rise to new physical, chemical or optical properties tailored for a specific application. This presentation will highlight the development of 3M products based on engineered micro- and nanostructures, using a customer-inspired innovation approach. While a range of materials will be discussed, this seminar will highlight the development of light-extraction films for optoelectronic and display applications as a case study.