



***Micro-Engineered Filtration: The Study and Design
of Filtration Materials at the Micro-Scales***

**Anil Suthar
Donaldson Company**

What would happen if filtration materials could be precisely studied and controlled at the micro-scale? Most filtration is driven by the microscopic interaction of contaminants and fluids with the structural components of filtration materials. And while filtration materials are produced using very specific micro components, these components are randomized during the material creation process. The resultant material is a semi-random assortment of pores and structures that are not precisely controlled. In addition, filtration is often studied and developed at the macro-scale through bulk measurements of permeability, porosity, and efficiency. New applications of micro-engineering will move the future of filtration research and design to a scale much more relevant to our science.