

Partial Pore Blocking in Microfiltration Recycling of a Semisynthetic Metalworking Fluid

Membrane pore blocking during microfiltration of semisynthetic metalworking fluids was a regular occurrence. How did blockages occur and could a mathematical model be developed to simulate pore blockage?

ISTC's Kishore Rajagopalan and colleagues from the University of Illinois discovered that partial blocking of pore spaces from microemulsion aggregation was a new fouling mechanism leading to total pore space blocking and causing a reduction in flux. The team was able to develop a model that simulated both total and partial pore space blockage.

- Contaminants
- Aquatic Plastic Debris
- Metals
- Metalworking Fluids
 - A Turbidimetric Method for the Rapid Evaluation of Metalworking Fluids Emulsion Stability
 - An Evaluation of the Colloidal Stability of Metalworking Fluid
 - Development of a Novel Metalworking Fluid Engineered for Use with Microfiltration Recycling
 - Engineering of Ultrafiltration Equipment in Alkaline Cleaner Applications
 - Formulation and Testing of a Microfiltration Compatible Synthetic Metalworking Fluid
 - Impact of Environmental Contaminants on Machining Properties of Metalworking Fluids
 - Ingredient-Wise Study of Flux Characteristics in the Ceramic Membrane Filtration of Uncontaminated Synthetic Metalworking Fluids
 - Modeling the Effect of Tramp Oil Contamination on Selective Component Depletion in Metalworking Fluid Systems
 - Partial Pore Blocking in Microfiltration Recycling of a Semisynthetic Metalworking Fluid
 - Purification of SemiSynthetic Metalworking Fluids by Microfiltration
 - The Effect of Chip Adsorption on Selective Depletion from a MultiComponent Synthetic Metalworking Fluid
- Per- and Polyfluoroalkyl Substances (PFASs)
- Agricultural Chemicals
- PPCPs in the Environment
- PCBs & PBDEs
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Energy
- Resource Recovery
- Water
- Instruments & Equipment
- Sponsored Research Program

Meet the Scientists

Kishore Rajagopalan

Publications

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