

Modeling the Effect of Tramp Oil Contamination on Selective Component Depletion in Metalworking Fluid Systems

Metalworking fluids are designed to perform specified tasks in the factory. However, these fluids can become contaminated during the manufacturing process by other factory components such as tramp oil. As more and more tramp oil contaminates the metalworking fluids, the less effective the fluids become, resulting in degraded products. To predict the contamination rate and thus have a tank-side timed application of oil remover, the researcher developed a predictive model. This model was run under several scenarios and compared with controlled lab tests and published industrial systems. The experiments showed that the tramp oil being added to the system indeed had an impact on the effectiveness of the metalworking fluid. The model also correlated well with lab and published data, and therefore, the authors recommended that this technology be implemented to expand the life of metalworking fluids.

- 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

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Publications

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