



1 *Microsieve with hole diameters of 8  $\mu\text{m}$ .*

## APPLYING OF MICROSIEVES

### DEVELOPMENT AND OPTIMIZATION OF TAILOR MADE SEPARATION PROCESSES

#### Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT

Osterfelder Strasse 3  
46047 Oberhausen, Germany

**Dr.-Ing. Ilka Gehrke**  
Head of Department  
Photonics and Environment  
Phone +49 208 8598-1260  
ilka.gehrke@umsicht.fraunhofer.de

**Dipl.-Ing. Josef Robert**  
Head of Department  
Process Engineering  
Phone +49 208 8598-1150  
josef.robert@umsicht.fraunhofer.de

[www.umsicht.fraunhofer.de](http://www.umsicht.fraunhofer.de)

Do you want to separate valuable materials, clarify a product or reject particulate matter? Do you have problems with blocking or stability of membranes and detect contaminants in your products?

We can help with the development and optimization of tailor made separation processes based on microsieves.

#### Keywords

- Maximum selectivity
- High efficiency
- High thermal and chemical stability

#### Industrial sectors

- Water technology
- Wastewater technology
- Life science
- Pharmacy
- Chemical industry
- Flue gas purification



1 *Stirring cell.*

2 *Microsieve.*

---

#### Technological specification

- Microsieve of stainless steel, nickel and silicon nitride (dp 0,3 to 10  $\mu\text{m}$ , filtration area >  $\varnothing 5''$ )
- Functionalized microsieves with reactive surfaces
- Test facility at laboratory scale (stirring cell, filtration area <  $\varnothing 80$  mm, 400 ml sample volume, < 100 bar)
- Test facility at pilot scale (filtration area < 0,3 m<sup>2</sup>, approx. 1 m<sup>3</sup>/h, < 16 bar)
- Laboratory analysis (3-D-microscopy, particle sizer, turbidity measurement, zeta sizer)

---

#### Our service

- Screening tests at laboratory scale
- Development and implementation of microsieve processes and pilot plants
- Development and implementation of prototypes
- Feasibility studies
- Market studies
- Laboratory analysis

---

#### Your benefit

- Optimized product quality
- More efficient applications
- High process reliability through maximum selectivity and robustness