

BayPAT

Detection of mineral and bio-based deposits on filtration membranes

Reference No: B79033

CHALLENGE

High-tech filtration applications are fundamental to many processes, amongst others in water supply or in the food and medical industries. However, since the direct membrane environment is the area with the highest solute (e.g. salts, sugars, protein) or particle (e.g. crystalline material, bacteria) concentration, membrane clogging is a key issue when optimizing filtration processes. Currently, some physical parameters such as liquid pressure or conductivity are used to estimate when membrane modules should be flushed or replaced. Often, a generic maximum filtration volume or generic end date will be linked to a replacement date. Thus, the full potential of filtration modules can usually not be exploited.

INNOVATION

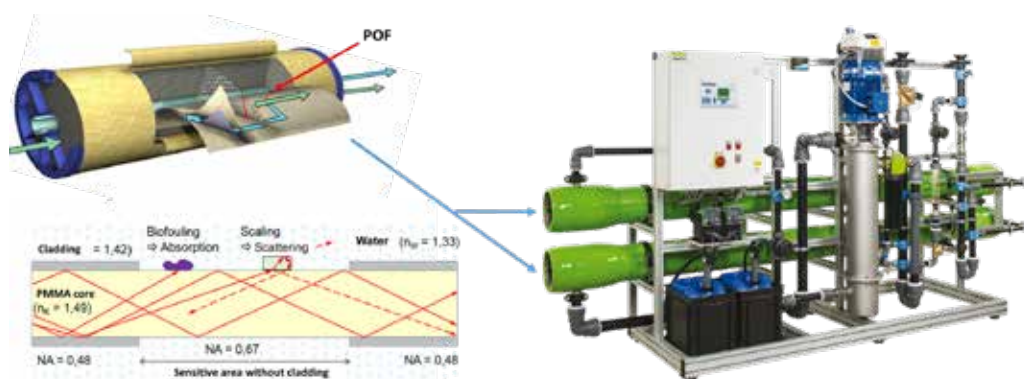
The innovative technology uses polymer optic fibers and their optical properties to follow the build-up of membrane deposits in real time. This allows flush cycles to be scheduled before non-removable deposits build up, process speed to be optimized and the life-cycle of a filtration module to be significantly prolonged – thus leading to maximized liquid throughput and minimized system down-times necessary for service, cleaning or filter module exchange.

COMMERCIAL OPPORTUNITIES

- Filter modules with in-built polymer optical fiber
- External surveillance modules connected to a by-pass pipe to main filtration system

Application fields:

- Filtration applications for drinking water, sea water & process water.
- Concentration applications in e.g. the food and medical industries.



DEVELOPMENT STATUS

RO membrane prototype tested in lab and brewery environment (water filtration).



Technology from
TECHNICAL
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MUNICH

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Contact:

Dr. Rebecca Kohler
+49 (0) 89 5480177-33
rkohler@baypat.de

**Bayerische
Patentallianz GmbH**
Prinzregentenstr. 52
80538 München
www.baypat.de