Oil-water separation by adsorbents and membranes

Ambient temperature processes for purifying water and capturing the oil. Systems can be developed for installation on boats and collect oil from oil-in-water dispersions.

- **Adsorbents**
  - Adsorbent mats
  - Super-oleophilic nanoporous material based on coated ceramic nanowires
  - Possible oil regeneration
  - Can absorb 20 times its own weight in motor oil
  - Can be recycled several times

- **Membranes**
  - Hydrophilic membrane
  - Controlled pore size
  - Polishing step: Watercatox™ catalytic membrane

- **Adsorbents + Membranes**
  - Efficient adsorbent separation
  - Possibility for adsorbent regeneration
  - Continuous operation
  - Similar to FracSep™ technology for oil purification

---

Contact:
- Senior Business Developer, Henrik Ræder
  henrik.raeder@sintef.no
- Research Manager, Partow Pakdel Henriksen
  partow.henriksen@sintef.no
- Senior Scientist, Monika Pilz
  monika.pilz@sintef.no

SINTEF Materials and Chemistry