Anti-Oil-Fouling Superhydrophobic Surfaces

Steven Severtson (PI), Jilin Zhang

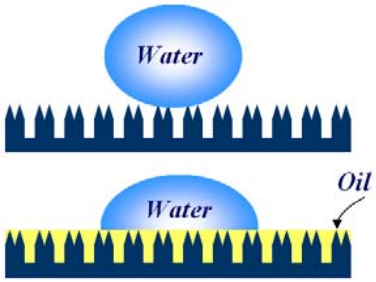
Department of Bioproducts and Biosystem Engineering, University of Minnesota

NNIN Facility used: Characterization Facility

- In nature, superhydrophobicity is eliminated by oil contaminants;
- Oil contaminants are also fatal to artificial superhydrophobic coatings;
- In the past, the only way to solve this issue was to use costly and harmful fluorochemicals.

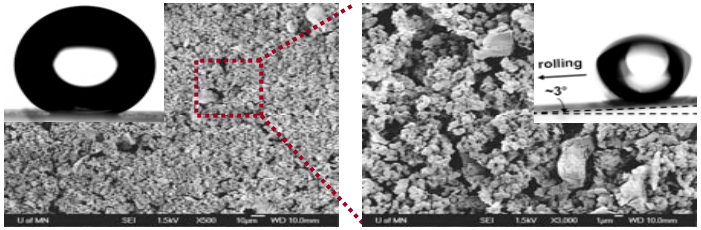
Tulip

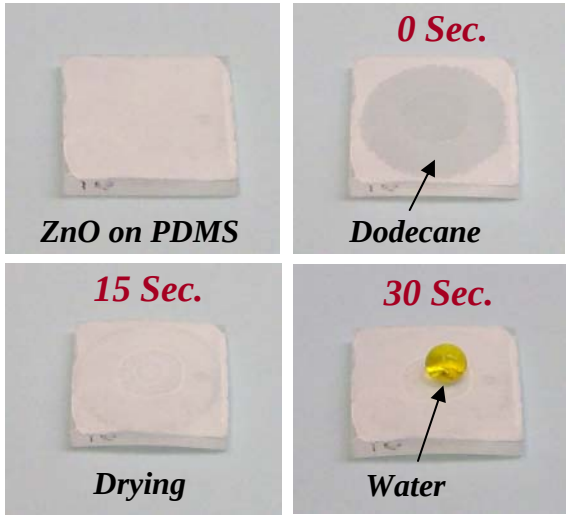
Superhydrophobic tulip



Superhydrophobicity is eliminated by oil fouling

- An economic and environment-friendly superhydrophobic coating was achieved without fluorochemicals.
- The coating can efficiently self-clean oil contaminants, and recover superhydrophobicity.





Publications

- ACS Applied Materials and Interfaces (**2010**), 2, 2880–2883.