

Surfactants Transport Water Molecules Across an Oil Layer by Enveloping Them in a Polar Solvation Cage

Garegin A. Papoian, Department of Chemistry, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599

- The microscopic mechanism of water transport in microemulsions is not well understood
- We carried out the largest atomistic simulation of a microemulsion (water/octane/C9E3), reported to date
- We found that surfactant molecules, enveloping single water molecules in a polar solvation cage, carry waters across the oil layer
- This was the dominant mode of water transport

