

Hydrophobic Hydration Behavior near Positively-Charged Surfactants

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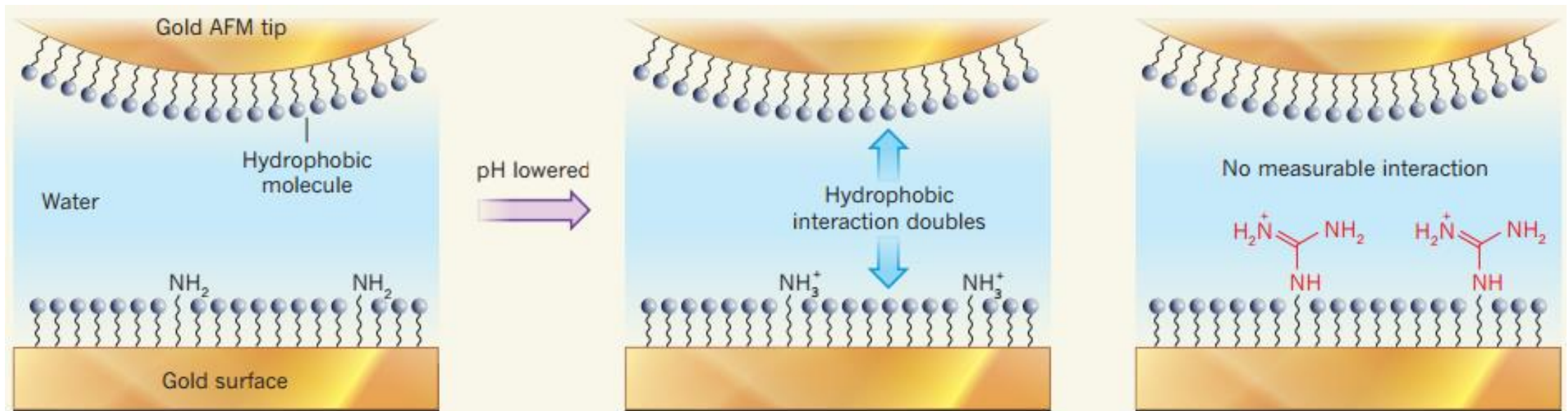
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Hydrophobic Interactions

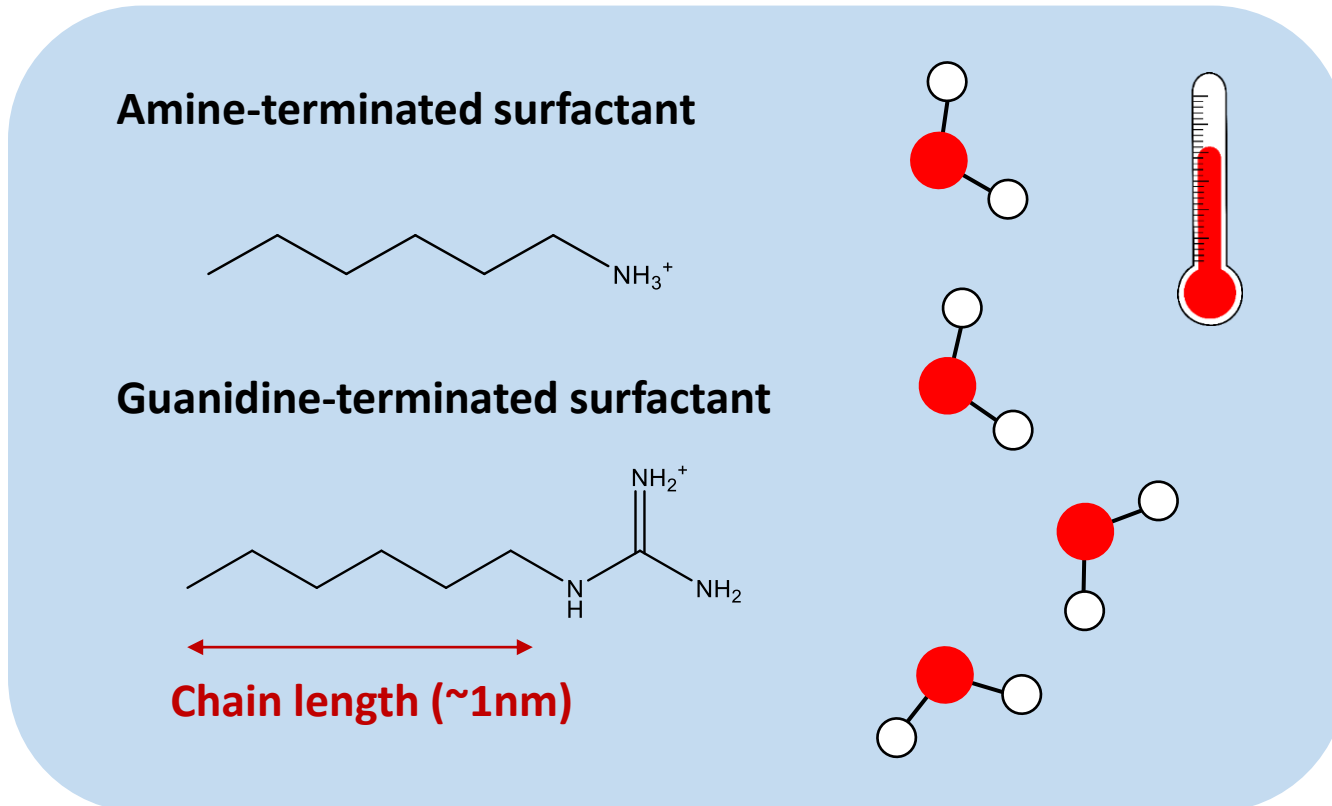
- Attractive forces generated between non-polar substances or surfaces
- Dynamic structuring of water molecules near non-polar interfaces
- Examples: Separation of water and oil, surfactant aggregation, protein folding, etc.



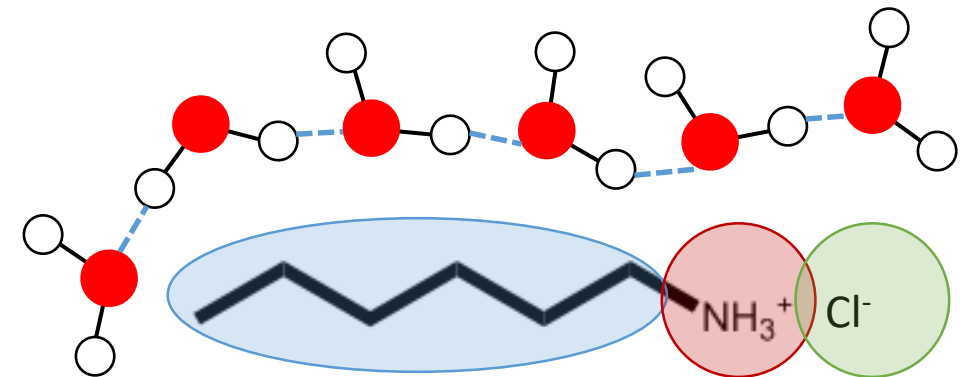
Immobilized cations modulate hydrophobic interactions

Goal of Research

Explore hydrophobic hydration behavior near amine- and guanidine-terminated surfactants in bulk solutions as a function of the temperature



e.g. Hexylammonium



Raman Spectra

= Non-polar tail + charged head + counter ion
+ Interfacial water molecules

Preliminary Results



Material Science Center – Raman spectroscopy

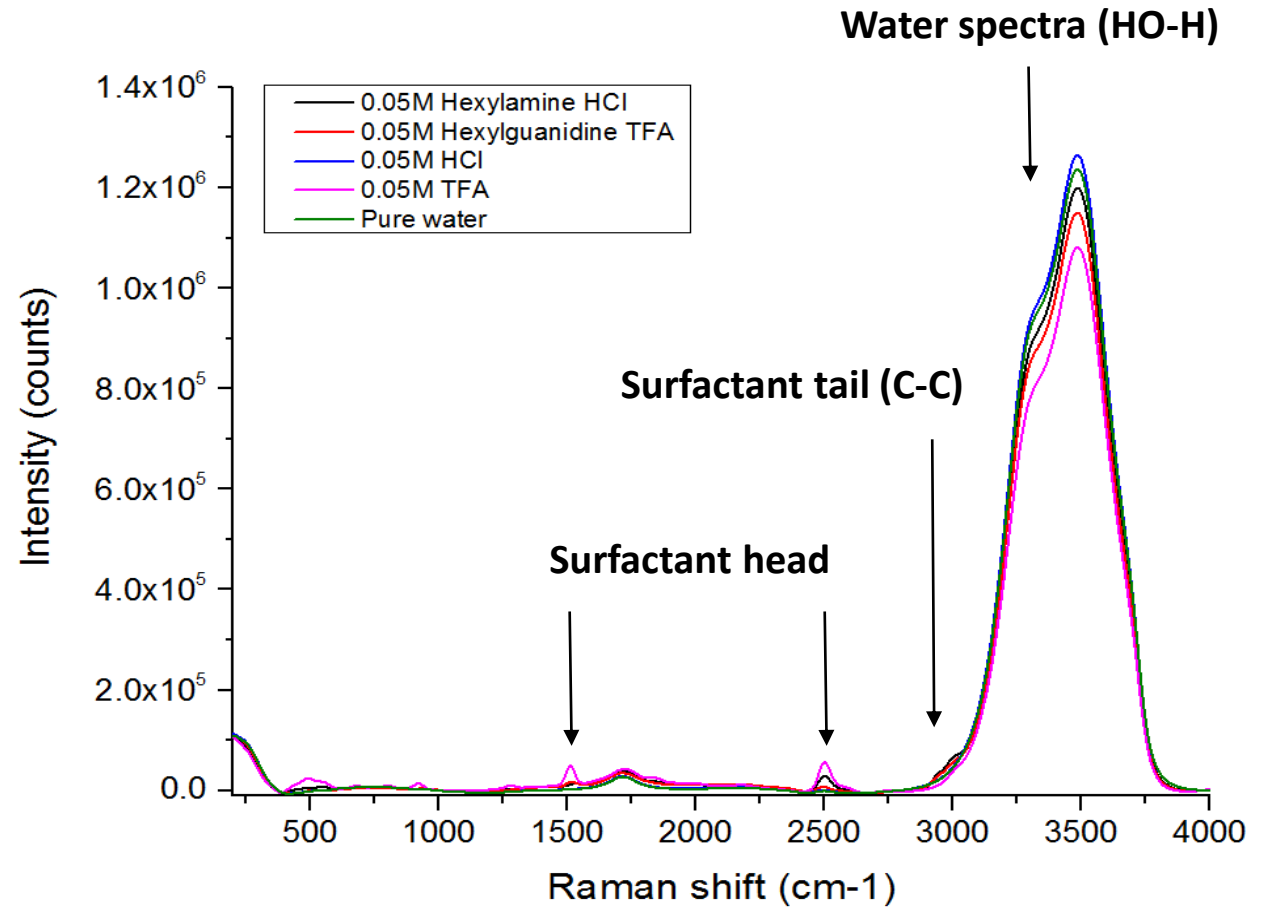


Figure. Raman spectra of i) 0.05M hexylamine HCl, ii) 0.05M hexylguanidine TFA, iii) 0.05M HCl, iv) 0.05M TFA, and v) pure water at room temperature.

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