

## **Supported Amphiphilic Bilayers: Is a Methyl Group All You Need?**

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Amphiphilic molecules typically contain a relatively long hydrophilic group and a relatively compact hydrophobic group. These ingredients allow for the formation of complex structures such as lipid bilayers, multilayers and micelles. How large must the hydrophilic group be to drive complex organization? In the case of acetonitrile, spectroscopic experiments and simulations suggest that, at a silica interface, a methyl group is sufficiently large to drive the formation of a lipid-bilayer-like structure, even in the presence of a substantial amount of water. This unexpected interfacial ordering may play an important role in processes ranging from chemical separations to heterogeneous catalysis.