Einladung zum Vortrag von

Prof. Ken D. Shimizu

Department of Chemistry and Biochemistry, University of South Carolina, Columbia, USA

“A versatile model system for studying non-covalent interactions of aromatic surfaces”

Non-covalent interactions of aromatic surfaces are important to the function of many synthetic and biological systems. Yet, the fundamental origins and stability trends of these weak interactions are still a subject of considerable study and debate. One reason is the lack of accurate and comprehensive experimental data. To address this problem, we developed a small molecule model system that can form and accurately measure the strength of intramolecular interactions of aromatic surfaces. Due to a central N-arylimide single bond with restricted rotation, the rigid bicyclic framework is in equilibrium between folded and unfolded confirmations, which can and cannot form the intramolecular noncovalent interaction. Thus, measurement of the folded/unfolded ratio by 1H NMR integration provides a measure of the interaction of interest. Due to the synthetic versatility and ease of preparation, we have applied this model system to study a range of noncovalent interactions of aromatic services including: face-to-face π-stacking, dispersion, OH-π, fluorine-π, heterocyclic π-stacking, and Ag-π.

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Hörsaal 3 der Fakultät für Chemie
Währinger Straße 38, 1090 Wien