

---

McGill  
Chemical  
Society



McGill



**Dr. Markus Lackinger**

Ludwig-Maximilians-University, Munich, Germany.

---

*Self-Assembly of Tritopic Building Blocks - Tuning Interaction Strength*

---

**Tuesday September 21<sup>st</sup>, 2010 1:00pm**

Otto Maass room 10

Substrate supported one layer thick molecular nanostructures are a topic of broad interest and intense basic research. Yet, in the light of future applications as template structures or in sensorics and catalysis, often mechanical, chemical, and thermal stability are important requirements. In order to improve the stability of molecular nanostructures, foremost intermolecular bonds need to be strengthened. In this contribution we present different examples, for relatively weak hydrogen bonded, intermediate metal-coordinated, and strong covalently bonded molecular networks.

For preparation of two-dimensionally interlinked molecular networks three-fold symmetric, tritopic molecules are appropriate building blocks. Here we present and discuss STM results obtained both at the liquid-solid interface and under ultra-high vacuum conditions. We show that tricarboxylic acids can yield nanoporous networks, where the pore size can be tuned by modifications of the organic backbone. On the other hand, for similar organic backbone, various molecular networks can be obtained which differ in type and strength of intermolecular bonds by varying the functional head group and / or the substrate. Thereby substrate induced and dependent chemistry as dissociative chemisorption and reaction with adatoms can play a crucial role.

EVERYONE IS WELCOME!

---