

Abstract Submitted  
for the MAR06 Meeting of  
The American Physical Society

**A Two-dimensional Porphyrin-based Porous Network Featuring Communicating Cavities** A. KIEBELE, H. SPILLMANN, M. STOEHR, N. WINTJES, University of Basel, T. JUNG, Paul Scherrer Institute, D. BONIFAZI, F. CHENG, F. DIEDERICH, ETH-Zurich — Metallo-porphyrins and their derivatives have been shown to be exceedingly useful building blocks for the construction of 3D supramolecular functional networks due to their excellent thermal and chemical stability and synthetic versatility. Nonetheless, no 2D analogon has been reported so far, although these could be interesting for various potential applications such as molecular sieves or chemical sensors. Herein we report on an unprecedented 2D porphyrin network featuring pores capable of hosting fullerenes following a bottom-up approach at a single crystal silver surface. Surface- and porphyrin-driven long-range interactions between the C<sub>60</sub> guest molecules and porphyrin layer resulted in the formation of exceptionally large supramolecular hybrid chains and islands as evidenced by Scanning Tunneling Microscopy.

Andreas Kiebele  
University of Basel

Date submitted: 11 Nov 2005

Electronic form version 1.4