mation of a thick layer around the microsphere. The researchers said that both limiting tests agree reasonably with theory.

The researchers then characterized a nanolayer composed of poly-L-lysine hydrogel, which, due to its very high charge, readily adsorbs negatively charged biomolecules. Poly-L-lysine hydrogel nanolayers are also difficult to characterize using other methods because it forms such thin layers with low contrast to water. The researchers observed a very small resonance shift, which their theory indicates corresponds to a layer thickness of 110 nm and an excess refractive index of 0.0012. The researchers said that as a result of their method, "the WGM resonator goes beyond its original promise as a biosensor." In addition, the researchers anticipate that real-time measurement of *S* will reveal morphology changes concomitant with increases in layer density. Furthermore, Arnold and his co-researchers said that an alternate formulation of their theory applied to nonspherical particles "shows promise for looking at heterogeneous structures such as adsorbed bacteria."

STEVEN TROHALAKI

Metalorganic Gel Used for Porous Organic Polymer Template

Coordination polymers where metal centers are linked by organic bridging ligands represent novel materials with potentially useful porosity and inclusion properties. Much of the research on this class of materials has, however, focused on studying single crystals of these materials to understand the molecular basis for their formation and properties. Polymer gels—which potentially have interesting properties in catalysis, sensing, and as responsive materials—have been far less studied. In the March 28 issue of *Chemical Communications* (DOI: 10.1039/b418554d), Q. Wei and S.L. James from the Queen's University of Belfast in Northern Ireland report the reaction of iron nitrate and 1,3,5-benzenetricarboxylic acid in ethanol to give a metalorganic gel with a solvent content of 95–98% by weight.

The researchers propose that coordination polymer particles are formed by rapid cross-linking polymerization between Fe^{3+} and the benzenetricarboxylic acid and that these particles are further cross-linked to provide macropores that trap solvent molecules. The gel can be formed in the presence of organic monomers, which can be trapped in the cavities and polymerized to form porous imprints of the metalorganic gel. Wei and James demonstrate this for poly(methyl methacrylate) (PMMA) by polymerizing methyl methacrylate in the gel cavities and dissolving the gel framework in hydrochloric acid. The resulting PMMA imprint contains disordered pores with a size range of 1–10 μm.

James said that the major advantage of this technique is that it is a straightforward and inexpensive route to templating porous organic polymers, which have potential applications in supports and separations. The presence of metalorganic particles within the polymer matrix suggests that other interesting magnetic and responsive properties may be observable in these materials, the researchers said.

SARBAJIT BANERJEE

Tungsten Nanoparticles Embedded in Silica Enhance Nonvolatile Memory

Many consumer electronic products use nonvolatile memory devices in their operation. One such device is electrically erasable and programmable read-only memory (EEPROM), which uses a floating gate structure. In the drive to develop memories with lower power consumption and faster erase/write cycles, researchers have begun to incorporate nanocrystals into their EEPROMs in order to improve performance. Recently, T.C. Chang of the National Sun Yat-Sen University, P.T. Liu of the National Chiao Tung University, and their colleagues demonstrated that replacing the floating gate in EEPROMs with tungsten nanocrystals in a silica matrix reduces the operating voltage and increases endurance. Using nanoparticles in