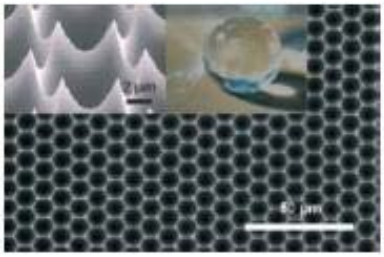
Superbowl!

Superhydrophobicity results from changes in surface roughness. The regular rough surfaces fabricated to date show remarkable superhydrophobic properties and allow the equilibrium configurations of droplets on rough substrates to be studied. However, due to fabrication limitations, research has so far concentrated on structures consisting of "posts" and "pillars", which make it difficult to



produce a perfectly ordered rough surface. Now, in their latest work, Professor Yang-Kyu Choi and co-workers at the Korea Advanced Institute of Science and Technology have developed an easy and cheap one-step microlithography technique, in combination with microstructures, to make hydrophobic surfaces. They used a wafer-scale, perfectly ordered microbowl array, designed with specific surface dimensions, which was found to exhibit excellent size-dependent superhydrophobic behavior. This technique can be used to achieve desired surface-wetting properties and aid quantitative studies of highly regular superhydrophobic surfaces. /sl

Y. K. Choi et al., *Small*, DOI: 10.1002/smll.200700881

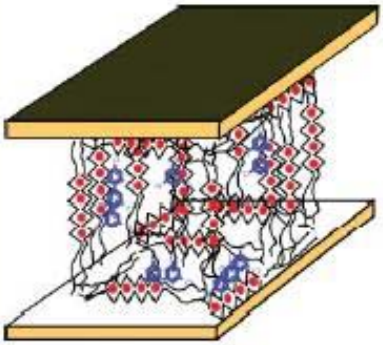
Superporous Hydrogels: A Swell Solution for Drug Delivery

Superabsorbent hydrogels can absorb and hold hundreds of times their weight in water, with non-leaky baby diapers one of their most successful applications. Researchers at Fudan University in China have demonstrated superabsorbent, superporous hydrogels that can absorb drug molecules, such as insulin, with controlled release in response to changes in temperature, pH, and ionic strength. These superporous hydrogels maintain their mechanical strength because of the addition of chitosan, a biocompatible polymer derived from the exoskeletons of crustaceans like crabs and shrimp, to form a strong interpenetrating polymer network. /df

C. H. Yin et al., *J. Appl. Polym. Sci.* **2008**, *108*, 1238

Mimicking Bio-Glues

Inspired by the remarkable ability of marine algae to attach to wet solid surfaces the authors of this publication aim towards finding a glue with similar adhesion properties, that does not depend on the complex procedure of extracting polyphenols from natural algae. Following the biomimetic approach the natural phenolic polymers were replaced by a low-molecular-weight synthetic analog. The chemical structure of phloroglucinol resembles that of the natural compound. This



replacement was not accompanied by a significant change in the adhesion properties. The biomimetic glue was tested on porcine tissues and the results indicate appropriate mechanical properties for the applicability as an soft tissue adhesive. /ks

H. Bianco-Peled et al., *Macromol. Biosci.*, DOI: 10.1002/mabi.200700239

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