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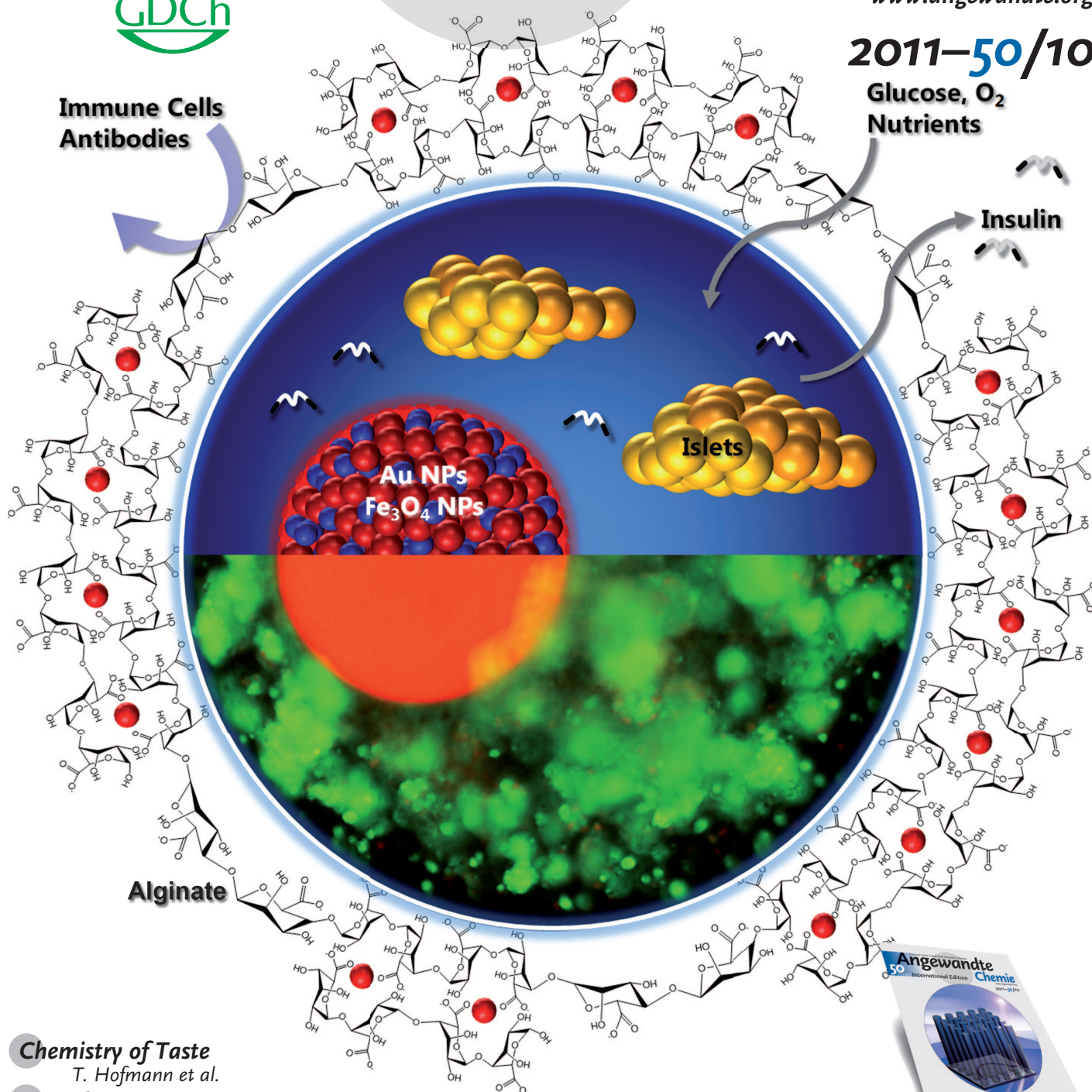
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2011–50/10

Glucose, O₂
Nutrients

Insulin



Chemistry of Taste

T. Hofmann et al.

Astrochemistry

S. Schlemmer

Iron Catalysis

O. García Mancheño

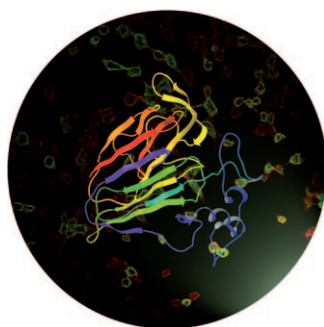


See
Back Cover

Cover Picture

Jaeyun Kim, Dian R. Arifin, Naser Muja, Taeho Kim, Assaf A. Gilad, Heechul Kim, Aravind Arepally, Taeghwan Hyeon,* and Jeff W. M. Bulte*

The dual shielding of pancreatic islets and multimodal imaging by using capsule-in-capsules is described in the Communication by T. Hyeon et al. on page 2317 ff. The semipermeable outer alginate membrane blocks the penetration of immune cells and antibodies, yet allows unhindered diffusion of nutrients, glucose, oxygen, and insulin produced by the islets. The inner capsule, which contains iron oxide and gold imaging agents, prevents direct exposure of the cells to the nanoparticles.

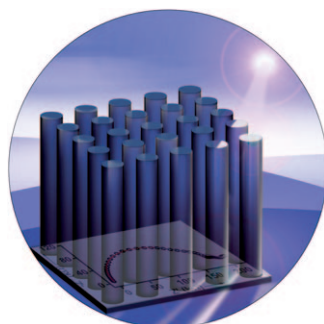
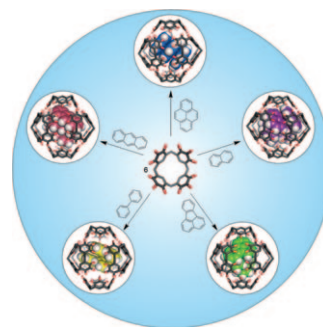


Chemistry of Taste

How does our sense of taste react to sweet- or umami-tasting things? T. Hofmann et al. describe in their Review on page 2220 ff. substances that evoke these senses of taste and discuss the activation of the taste receptors and the subsequent signal transduction.

Molecular Capsules

Pyrogalloarene self-assembles into hexameric capsules capable of trapping small molecules. On page 2244 ff. B. W. Purse et al. show that the brute force of a heat gun can be used to select for a delicate balance of weak interactions leading to kinetically trapped encapsulation complexes that are not formed in the presence of solvent.



Silicon Nanowires

In their Communication on page 2334 ff. D. Wang et al. compare silicon nanowires obtained by electroless etching or by chemical growth. The mid-gap traps that result from growth chemistry are the main reason for low solar energy conversion efficiencies.