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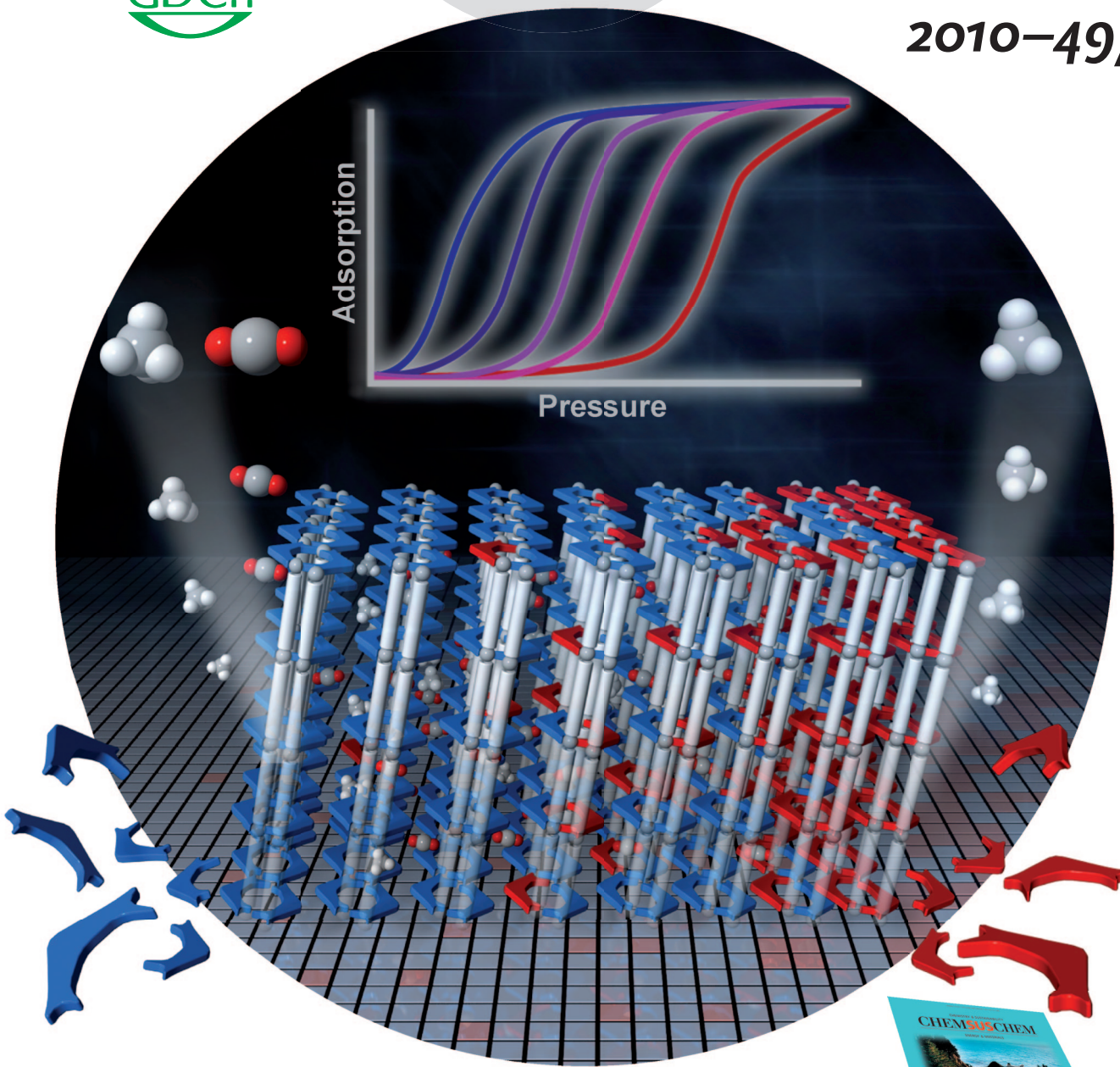

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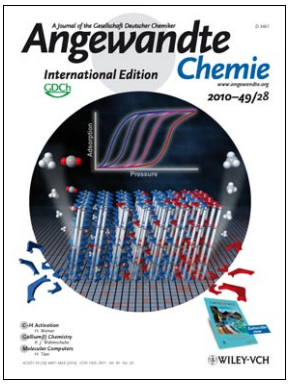
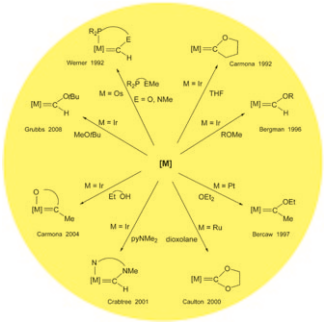
Cover Picture



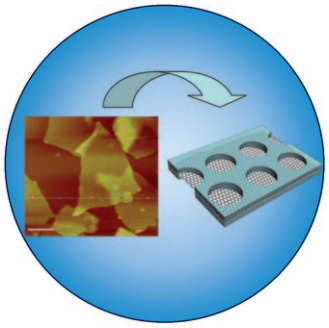
Tomohiro Fukushima, Satoshi Horike,* Yasutaka Inubushi, Keiji Nakagawa, Yoshiki Kubota, Masaki Takata, and Susumu Kitagawa*

The properties of porous frameworks can be modulated over the mesoscale domains in porous coordination polymers (PCPs). In their Communication on page 4820 ff., S. Horike, S. Kitagawa et al. demonstrate the synthesis of integrated crystals of two different types of flexible 2D layers. Changes in the composition of these so-called PCP solid solutions result in precise control of gas sorption isotherms and better performance than the parent compounds in the separation of a CO_2/CH_4 mixture.



C–H Activation
Oxocarbene–iridium complexes are capable of an unusual, previously unknown form of reactivity, namely that they undergo reactions with CO_2, CS_2, COS, PhNCO, and PhNCS by an atom- or group-transfer metathesis. In the Review on page 4714 ff., H. Werner presents the development of this chemistry since the discovery of carbene complexes.

Single-Molecule Studies
In their Communication on page 4730 ff., T. Hugel and co-workers combine single-molecule atomic force microscopy and thermodynamic modeling to extract the binding parameters of cosolutes of a macromolecule in solution and in its surface-adsorbed state.



Graphene-Based Nanosheets
In their Communication on page 4795 ff., X. Feng, K. Müllen et al. describe a bottom-up approach for the large-scale production of 2D nanosheets which have a sandwich structure and consist of SiO_2, C, and metal or metal oxide. These nanosheets are suitable for broad application in catalysis, sensors, and batteries.