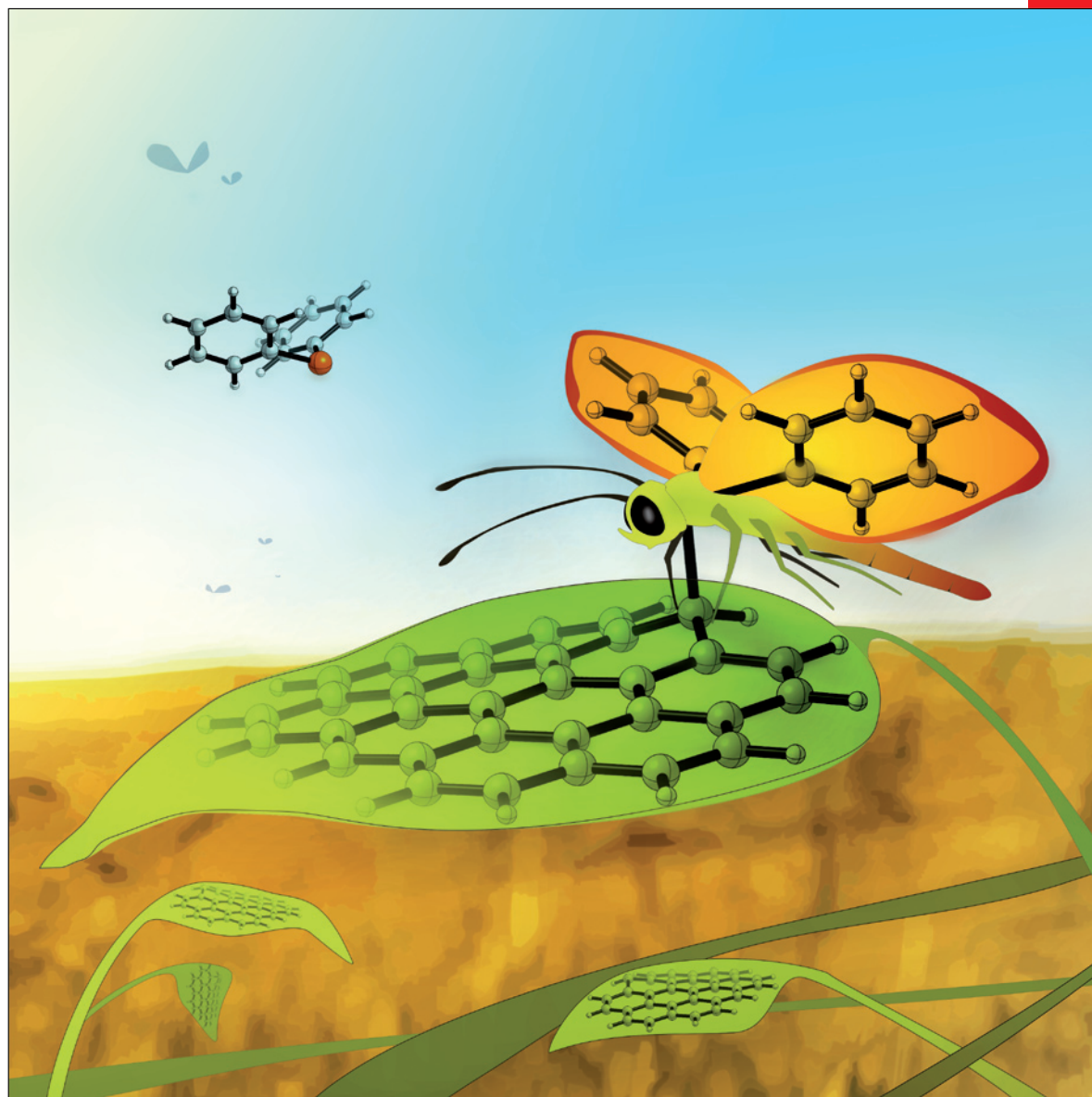


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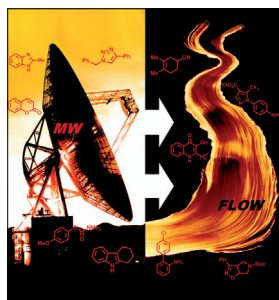
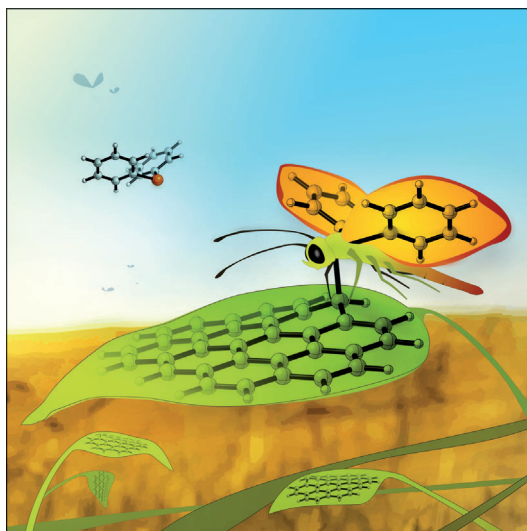
Concept

The Microwave-to-Flow Paradigm:
Translating High-Temperature Batch Microwave
Chemistry to Scalable Continuous-Flow Processes
C. O. Kappe and T. N. Glasov

 WILEY-VCH

Organophosphorus additives...

... are used as coke-inhibiting agents to reduce coking, an undesirable process that occurs in cracking units. DFT calculations show that organophosphorus radicals compete with coke-inducing carbonaceous radicals for the peripheral sites of the growing coke layer. The figure illustrates the organophosphorus radical that adds to the edge of the growing polyaromatic hydrocarbon, strategically blocking the peripheral site, preventing further coke growth. For more details see the Full Paper by S. Catak, V. Van Speybroeck et al. on page 12027 ff.

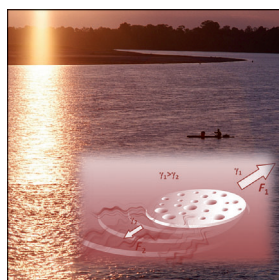
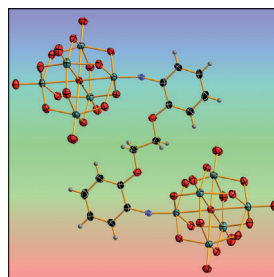


Flow Chemistry

In their Concept article on page 11956 ff., T. N. Glasnov and C. O. Kappe outline a “microwave-to-flow” concept that demonstrates how small-scale homogeneous microwave batch chemistry can be translated to a scalable continuous-flow process. Conventionally heated micro- or mesofluidic flow devices fitted with back-pressure regulators are employed to mimic the high temperatures and pressures attainable in a sealed-vessel microwave chemistry batch experiment.

Bolaamphiphiles

Functional bisarylamines with flexible *o*-alkoxy chains have been employed successfully to prepare POM-based bolaform amphiphilic hybrids with adjustable length. These bisarylamine ligands connect two hexamolybdates both in the solid state and in solution. It can be speculated that they could be used as bridges and nodes to form zero-dimensional nanomolecules, one-dimensional chains, or multidimensional frameworks. For more details see the Communication by Y. Wei, T. Liu et al. on page 12006 ff.



Self-Propelling Motors

In their Full Paper on page 12020 ff., M. Pumera and co-workers introduce a millimeter-sized polymer capsule motor that runs without any external energy sources or the consumption of external fuels such as H_2O_2 or glucose. The self-propelled motor can move on a wide variety of liquid/air interfaces, including water, sea water, organic solvent/water mixtures, and acids. The motion is attributed to the asymmetric release of organic solvent from the capsule and the asymmetric change in the surface tension of the surrounding liquid.

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