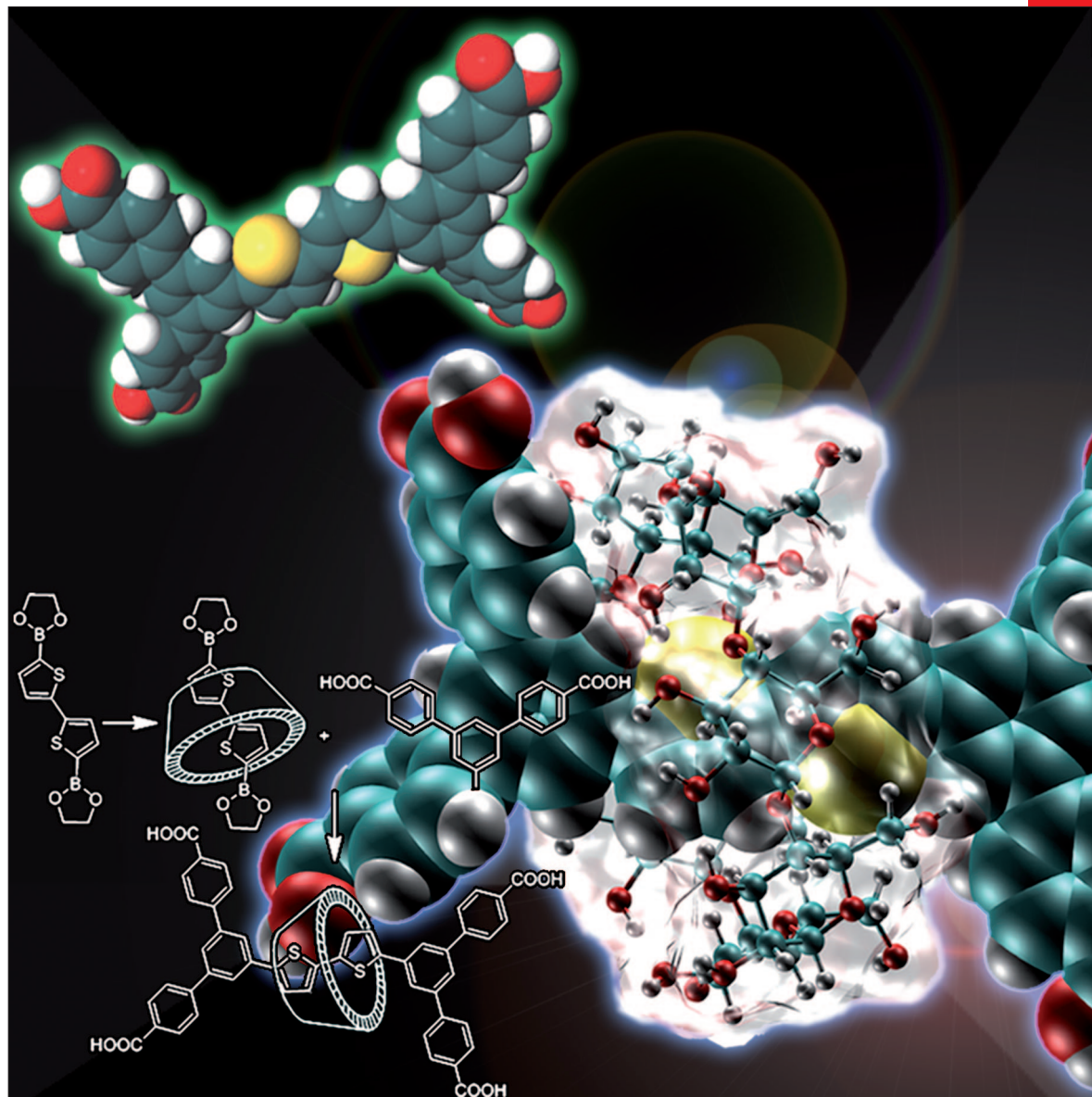


CHEMISTRY

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Review

Syntheses of Fumagillin and Ovalicin
J. Yamaguchi and Y. Hayashi

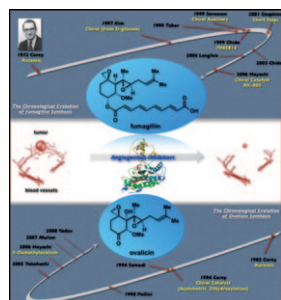
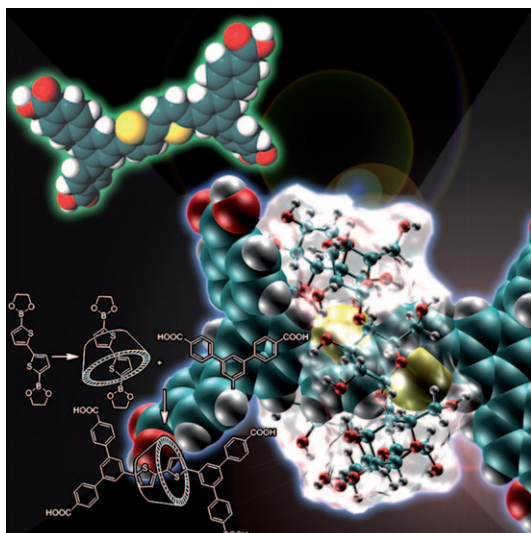
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... based on dithiophene and β -cyclodextrin (CD), as shown in the cover picture, and its shape-persistent corresponding dumbbell are discussed by L. Zalewski, D. Beljonne, H. L. Anderson, F. Cacialli, P. Samorì et al. in their Full Paper on page 3933 ff. In addition to the synthesis and characterization of both systems, they have elucidated the excited-state dynamics and the effect of cyclodextrin encapsulation, as well as finding that β -CD is a very mobile macrocycle. This work was supported by ESF-SONS2.

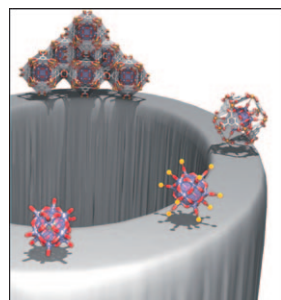
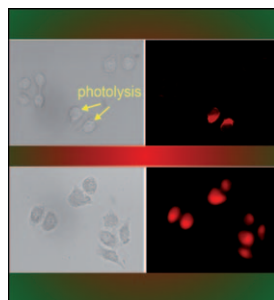


Total Synthesis

In their Review on page 3884 ff., Y. Hayashi and J. Yamaguchi systematically summarize the existing 16 total syntheses of natural products in the fumagillin and ovalicin family. Although these molecules are relatively small in size, many chemists have endeavored to develop concise, practical, and short routes toward them for over 35 years. The synthetic studies demonstrated exhibit the colorful creativity of the synthetic chemists involved, who all strive to create the same molecule, but often with completely different strategies.

Fluorescent Probes

In their Communication on page 3914 ff., W. Lin et al. report on a photocaging strategy for rosamines based on novel photocaging chemistry, that is, an intramolecular carbon-carbon spirocyclization. They also demonstrated that upon local photoactivation by visible light, one of the caged probes could be used for living cell fluorescence imaging in a light-dependent fashion.



Templated Synthesis

In their Full Paper on page 3926 ff., C. E. A Kirschhock, S. R. Bajpe et al. examine the template action of Keggin-type heteropolyacids leading to the rapid self-assembly of $\text{Cu}_3(\text{BTC})_2$ (BTC = 1,3,5-benzenetricarboxylic acid) metal-organic frameworks. The mechanism involves specific molecular-level matching and leads to explicit nanoscale building units.

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