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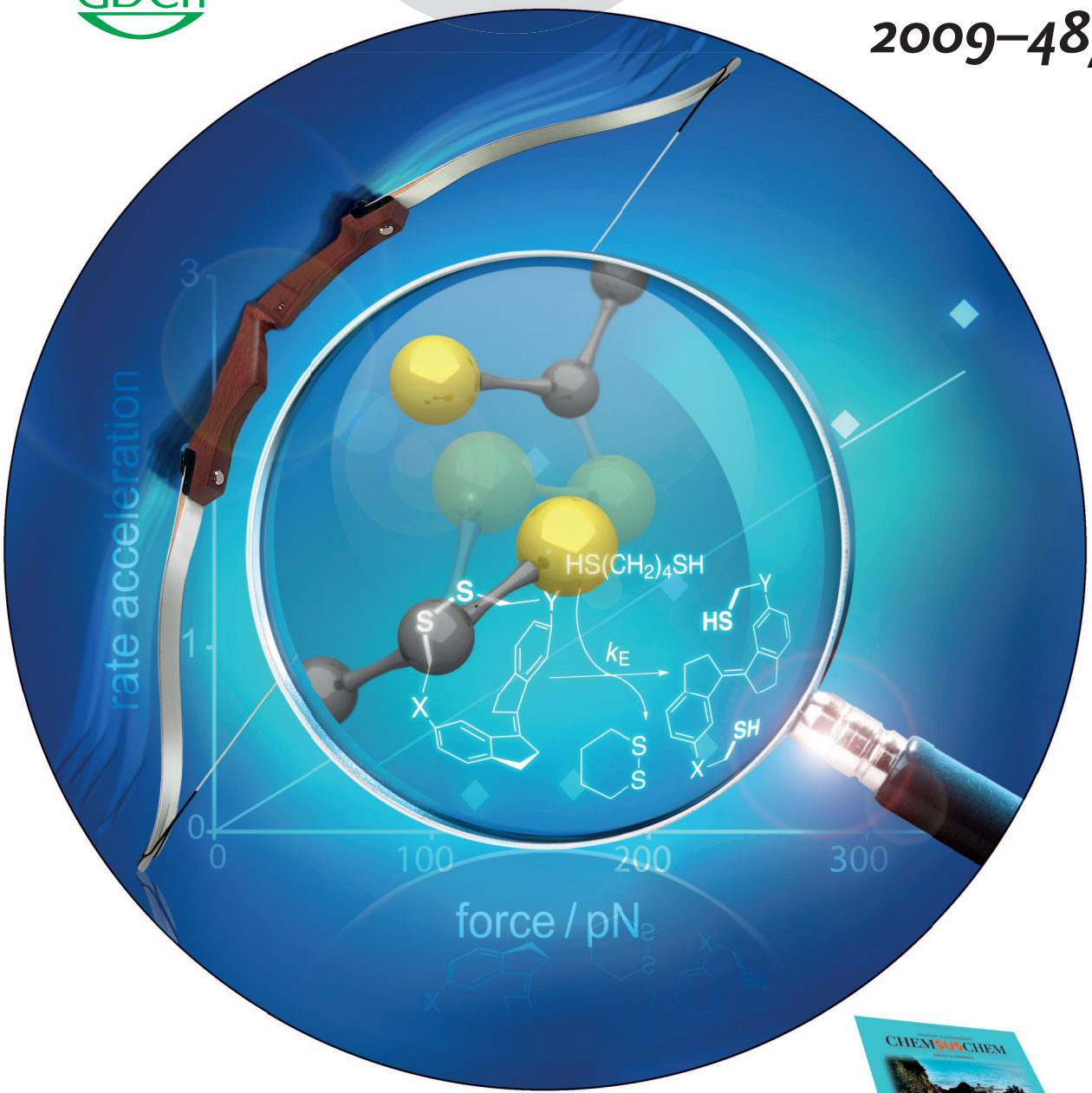

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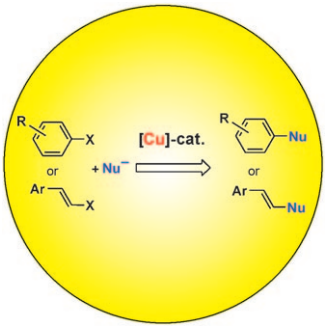
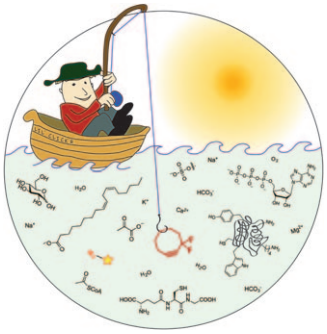
Cover Picture

Timothy J. Kucharski, Zhen Huang, Qing-Zheng Yang, Yancong Tian, Nicholas C. Rubin, Carlos D. Concepcion, and Roman Boulatov*

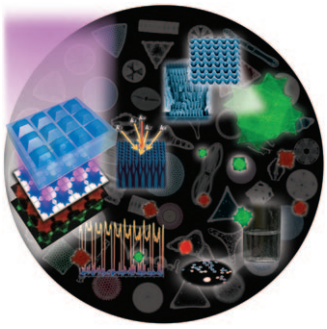
Increasing the strain in a series of macrocyclic disulfides was used to show that the kinetics of thiol/disulfide exchange is independent of force. The seemingly counterintuitive finding that pulling on a molecule does not accelerate its fragmentation is presented by R. Boulatov and co-workers on page 7040 ff. These results are consistent with the S_N2 mechanism of thiol/disulfide exchange and the simplest model of chemomechanical kinetics.



Coupling Reactions
In their Minireview on page 6954 ff., F. Monnier and M. Taillefer describe developments in copper-catalyzed cross-coupling reactions since 2004. The few mechanistic studies that have emerged thus far are also presented.



Bioorthogonal Chemistry
Bioorthogonal reactions are chemical reactions that proceed rapidly and selectively under physiological conditions. C. R. Bertozzi and E. M. Sletten describe in their Review on page 6974 ff. the development and application of such reactions for the study of biomolecules.



Artificial Algae
Holographic interference lithography through microprism arrays produces thousands of microstructures at a time. In their Communication on page 7000 ff., S.-M. Yang et al. use this method to produce free-floating fluorescent microparticles resembling diatomaceous algae.