

## IN THIS ISSUE

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## EDITORIAL

9043

### A diverse view of science to catalyse change

César A. Urbina-Blanco,\* Safia Z. Jilani,\* Isaiah R. Speight,\*  
Michael J. Bojdys,\* Tomislav Friščić,\* J. Fraser Stoddart,\*  
*et al.*

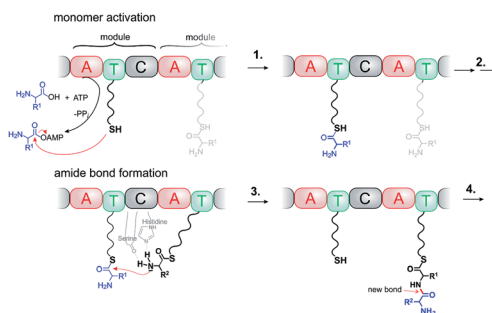


## PERSPECTIVES

9048

### Molecular assemblers: molecular machines performing chemical synthesis

Rainer Herges\*



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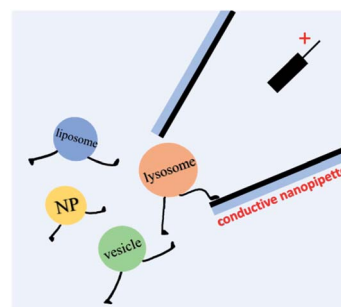
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## PERSPECTIVES

9056

**The double life of conductive nanopipette: a nanopore and an electrochemical nanosensor**

Rui Jia and Michael V. Mirkin\*

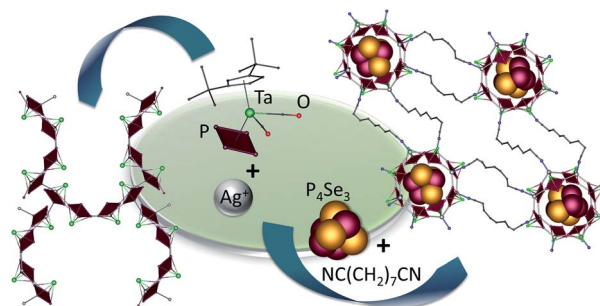


## EDGE ARTICLES

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**Use of a cyclo-P<sub>4</sub> building block – a way to networks of host–guest assemblies**

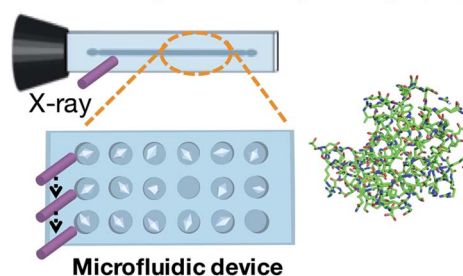
Eugenia Peresyphina, Martin Bielmeier, Alexander Virovets and Manfred Scheer\*



9072

**Room-temperature crystallography using a microfluidic protein crystal array device and its application to protein–ligand complex structure analysis**

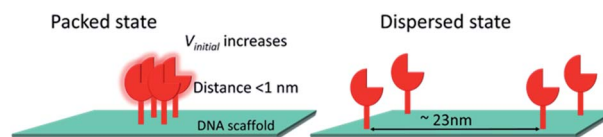
Masatoshi Maeki,\* Sho Ito, Reo Takeda, Go Ueno, Akihiko Ishida, Hirofumi Tani, Masaki Yamamoto and Manabu Tokeshi\*

**Room Temperature Crystallography**

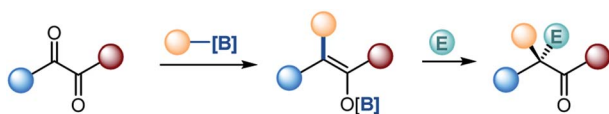
9088

**Enhanced enzymatic activity exerted by a packed assembly of a single type of enzyme**

Huyen Dinh, Eiji Nakata, Kaori Mutsuda-Zapater, Masayuki Saimura, Masahiro Kinoshita and Takashi Morii\*



9101

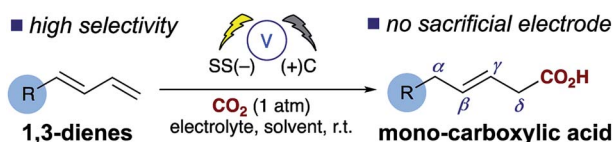


Base- and metal-free access to boron enolates  
Construction of two  $\alpha$ -C-C bonds in a tricomponent process  
One reaction enables both  $\alpha$ -alkylation and  $\alpha$ -arylation

### Deoxygenative $\alpha$ -alkylation and $\alpha$ -arylation of 1,2-dicarbonyls

Shengfei Jin, Hang T. Dang, Graham C. Haug, Viet D. Nguyen, Hadi D. Arman and Oleg V. Larionov\*

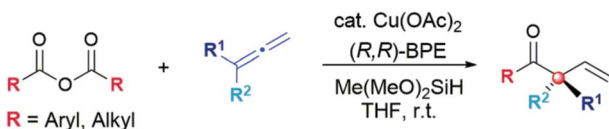
9109



### Selective $\alpha,\delta$ -hydrocarboxylation of conjugated dienes utilizing $\text{CO}_2$ and electrosynthesis

Ahmed M. Sheta, Mohammad A. Mashaly, Samy B. Said, Saad S. Elmorsy, Andrei V. Malkov and Benjamin R. Buckley\*

9115

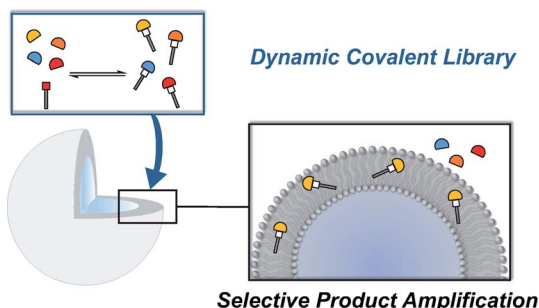


- ✓ *exclusive branch selectivity*
- ✓ *high regio- and enantioselectivity*
- ✓ *all carbon quaternary centers*
- ✓ *both aryl and alkyl anhydride tolerance*
- ✓ *versatile C=C bond and ketone functionalities*

### Catalytic enantioselective allene–anhydride approach to $\beta,\gamma$ -unsaturated enones bearing an $\alpha$ -all-carbon-quaternary center

Yuan Yuan, Xue Zhang,\* Hui Qian\* and Shengming Ma\*

9122



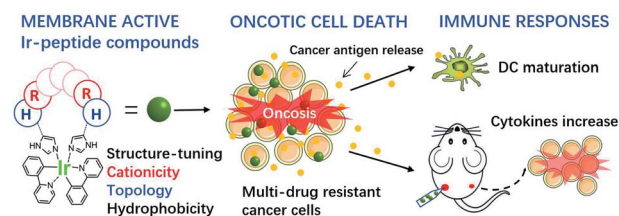
### Template effects of vesicles in dynamic covalent chemistry

Carlo Bravin and Christopher A. Hunter\*

9126

### Structure-tuned membrane active Ir-complexed oligoarginine overcomes cancer cell drug resistance and triggers immune responses in mice

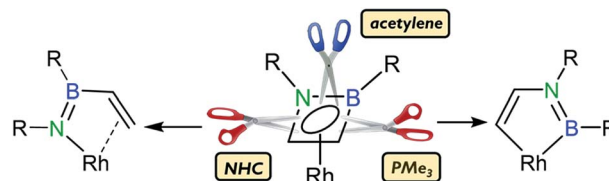
Shuangshuang Ji, Xiuzhu Yang, Xiaolong Chen, Ang Li, Doudou Yan, Haiyan Xu and Hao Fei\*



9134

### Diverse ring-opening reactions of rhodium $\eta^4$ -azaborete complexes

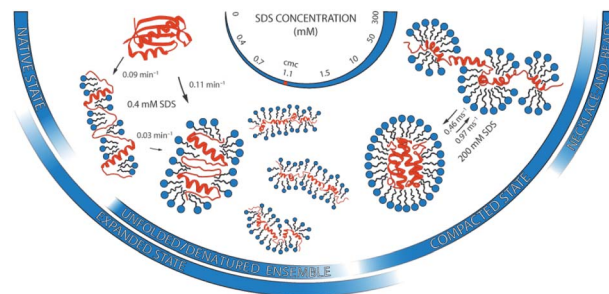
Merlin Heß, Tom E. Stennett, Felipe Fantuzzi, Rüdiger Bertermann, Marvin Schock, Marius Schäfer, Torsten Thiess and Holger Braunschweig\*



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### SDS-induced multi-stage unfolding of a small globular protein through different denatured states revealed by single-molecule fluorescence

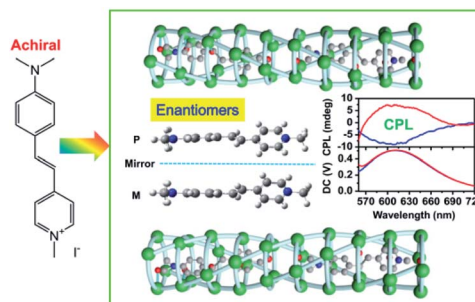
Georg Krainer,\* Andreas Hartmann, Vadim Bogatyr, Janni Nielsen, Michael Schlierf\* and Daniel E. Otzen\*



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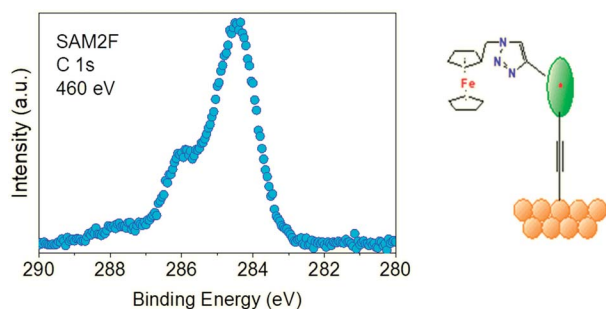
### Lanthanide MOFs for inducing molecular chirality of achiral stilbazolium with strong circularly polarized luminescence and efficient energy transfer for color tuning

Min Zeng, Ang Ren, Wubin Wu, Yongsheng Zhao,\* Chuanlang Zhan\* and Jiannian Yao\*





9162

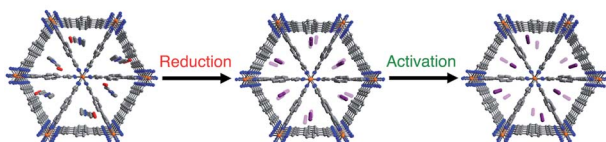


### Stability of radical-functionalized gold surfaces by self-assembly and on-surface chemistry

Tobias Junghoefer, Ewa Malgorzata Nowik-Boltyk, J. Alejandro de Sousa, Erika Giangrisostomi, Ruslan Ovsyannikov, Thomas Chassé, Jaume Veciana, Marta Mas-Torrent, Concepció Rovira, Núria Crivillers and Maria Benedetta Casu\*

9173

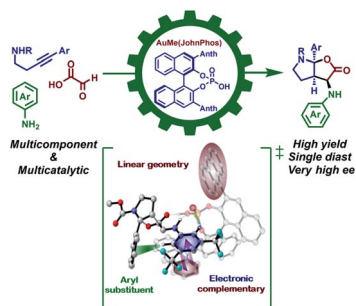
### Single-crystal-to-single-crystal chemical reduction and activation



### Crystallographic characterization of the metal–organic framework Fe<sub>2</sub>(bdp)<sub>3</sub> upon reductive cation insertion

Naomi Biggins, Michael E. Ziebel, Miguel I. Gonzalez and Jeffrey R. Long\*

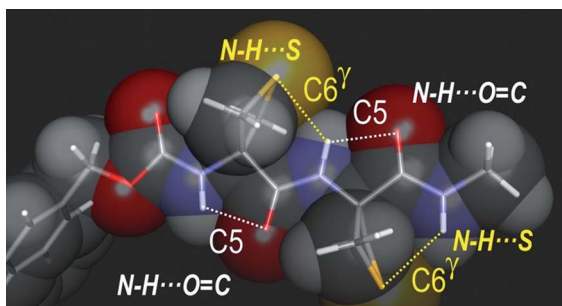
9181



### Multicomponent and multicatalytic asymmetric synthesis of furo[2,3-*b*]pyrrole derivatives: further insights into the mode of action of chiral phosphoric acid catalysts

Lara Cala, Pedro Villar, Ángel R. de Lera, Francisco J. Fañanás, Rosana Álvarez\* and Félix Rodríguez\*

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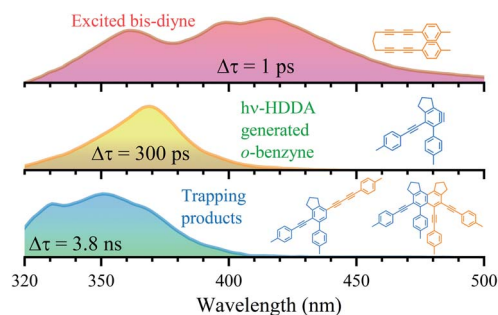
### Conformation control through concurrent N–H...S and N–H...O=C hydrogen bonding and hyperconjugation effects

Zeynab Imani, Venkateswara Rao Mundlapati, Gildas Goldsztejn, Valérie Brenner, Eric Gloaguen, Régis Guillot, Jean-Pierre Baltaze, Katia Le Barbu-Debus, Sylvie Robin, Anne Zehnacker, Michel Mons\* and David J. Aitken\*

9198

### Direct observation of *o*-benzyne formation in photochemical hexadehydro-Diels–Alder (*hν*-HDDA) reactions

Xiaonan Ma, Jan Maier, Michael Wenzel, Alexandra Friedrich, Andreas Steffen, Todd B. Marder,\* Roland Mitrić\* and Tobias Brixner\*



9209

### A synthetic glycan array containing *Cryptococcus neoformans* glucuronoxylomannan capsular polysaccharide fragments allows the mapping of protective epitopes

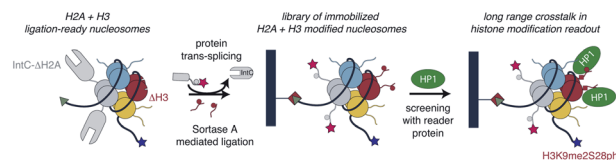
Lorenzo Guazzelli, Conor J. Crawford, Rebecca Ulc, Anthony Bowen, Orla McCabe, Anne J. Jedlicka, Maggie P. Wear, Arturo Casadevall\* and Stefan Oscarson\*



9218

### Examining histone modification crosstalk using immobilized libraries established from ligation-ready nucleosomes

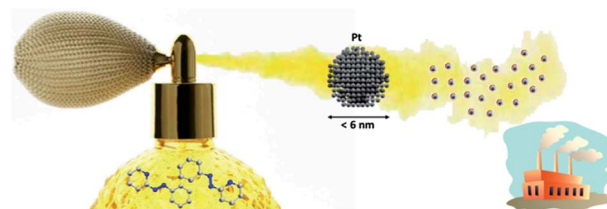
Diego Aparicio Pelaz, Zhadyra Yerkesh, Sören Kirchgäßner, Henriette Mahler, Vladlena Kharchenko, Dulat Azhibek, Mariusz Jaremko, Henning D. Mootz, Łukasz Jaremko, Dirk Schwarzer\* and Wolfgang Fischle\*



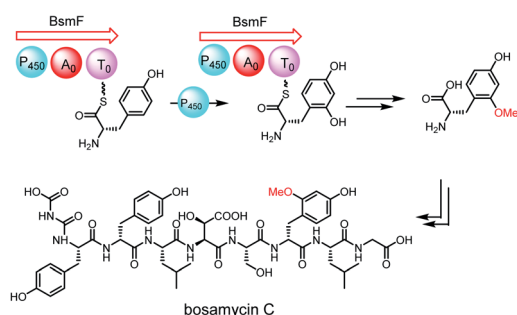
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### Size-selective Pt siderophores based on redox active azo-aromatic ligands

Debabrata Sengupta, Sreetosh Goswami,\* Rajdeep Banerjee, Matthew J. Guberman-Pfeffer, Abhijeet Patra, Anirban Dutta, Rajib Pramanick, Shobhana Narasimhan,\* Narayan Pradhan,\* Victor Batista, T. Venkatesan and Sreebrata Goswami\*



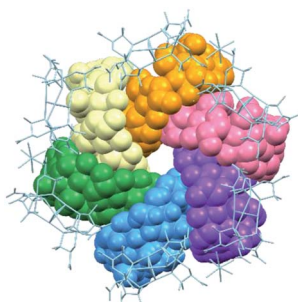
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### Discovery and biosynthesis of bosamycins from *Streptomyces* sp. 120454

Zi Fei Xu, Sheng Tao Bo, Mei Jing Wang, Jing Shi, Rui Hua Jiao, Yang Sun, Qiang Xu, Ren Xiang Tan\* and Hui Ming Ge\*

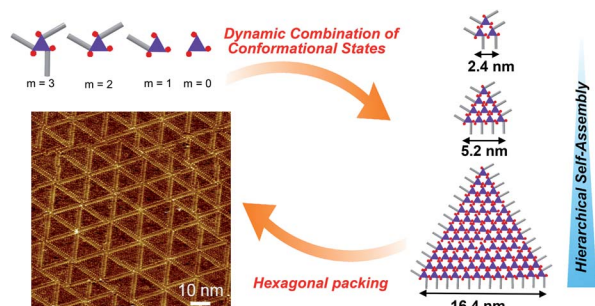
9246



### Self-assembly of cyclic hexamers of $\gamma$ -cyclodextrin in a metallosupramolecular framework with D-penicillamine

Supattra Somsri, Naoto Kuwamura, Tatsuhiro Kojima, Nobuto Yoshinari and Takumi Konno\*

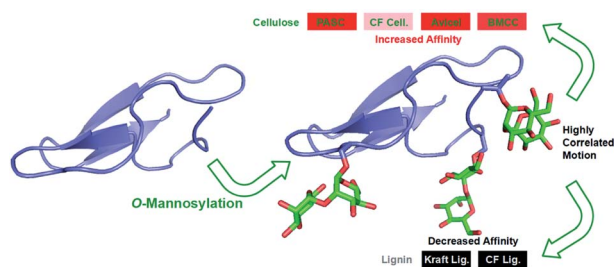
9254



### Hierarchical two-dimensional molecular assembly through dynamic combination of conformational states at the liquid/solid interface

Matsuhiro Maeda, Ruri Nakayama, Steven De Feyter, Yoshito Tobe\* and Kazukuni Tahara\*

9262



### Carbohydrate-binding module O-mannosylation alters binding selectivity to cellulose and lignin

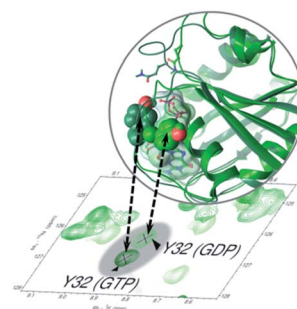
Yaohao Li, Xiaoyang Guan, Patrick K. Chaffey, Yuan Ruan, Bo Ma, Shiyong Shang, Michael E. Himmel, Gregg T. Beckham\*, Hai Long\* and Zhongping Tan\*



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### Structural impact of GTP binding on downstream KRAS signaling

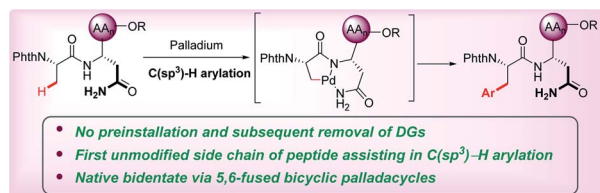
Dóra K. Menyhárd, Gyula Pálfi, Zoltán Orgován, István Vida, György M. Keserű\* and András Perczel\*



9290

### Peptide late-stage C(sp<sup>3</sup>)-H arylation by native asparagine assistance without exogenous directing groups

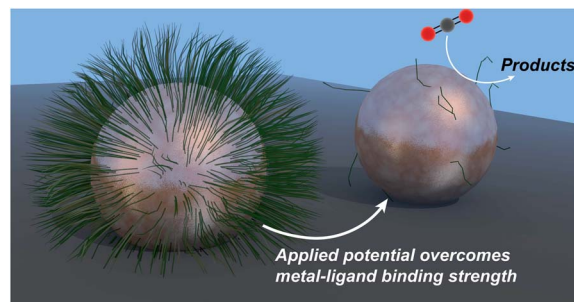
Yiyi Weng,\* Xingxing Ding, João C. A. Oliveira, Xiaobin Xu, Nikolaos Kaplaneris, Meijie Zhu, Hantao Chen, Zhuo Chen and Lutz Ackermann\*



9296

### Metal–ligand bond strength determines the fate of organic ligands on the catalyst surface during the electrochemical CO<sub>2</sub> reduction reaction

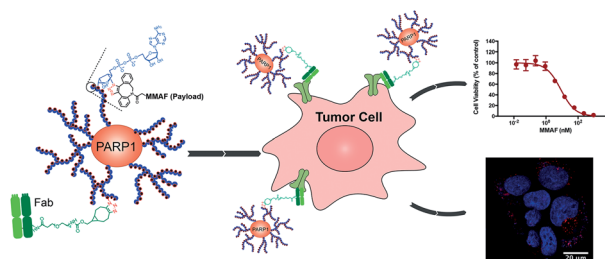
James R. Pankhurst, Pranit Iyengar, Anna Loiudice, Mounir Mensi and Raffaella Buonsanti\*



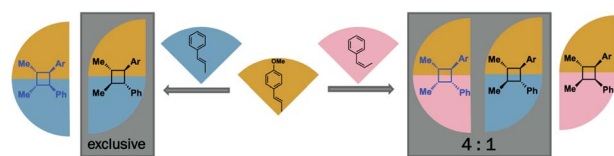
9303

### A poly-ADP-ribose polymer-based antibody-drug conjugate

Xiaojing Shi, Xiao-Nan Zhang, Jingwen Chen, Qinqin Cheng, Hua Pei, Stan G. Louie and Yong Zhang\*



9309



## Stereoretention in styrene heterodimerisation promoted by one-electron oxidants

Xinglong Zhang and Robert S. Paton\*