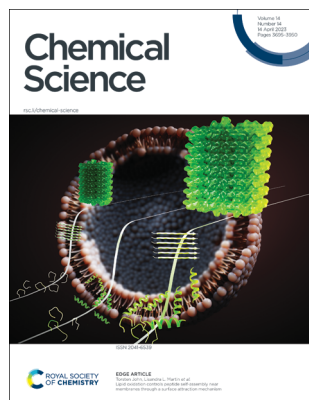


IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 14(14) 3695–3950 (2023)



Cover

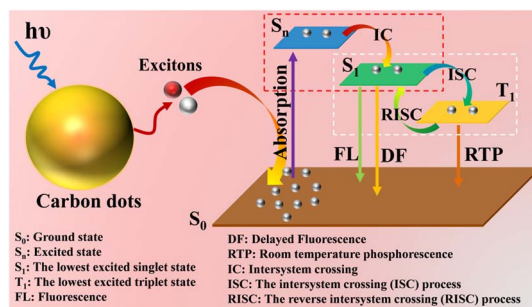
See Torsten John, Lisandra L. Martin *et al.*, pp. 3730–3741.
Image reproduced by permission of Ella Maru Studio from *Chem. Sci.*, 2023, **14**, 3730. Artwork by Ella Maru Studio.

REVIEW

3705

Evolution and fabrication of carbon dot-based room temperature phosphorescence materials

Jiurong Li, Yongzhong Wu and Xiao Gong*

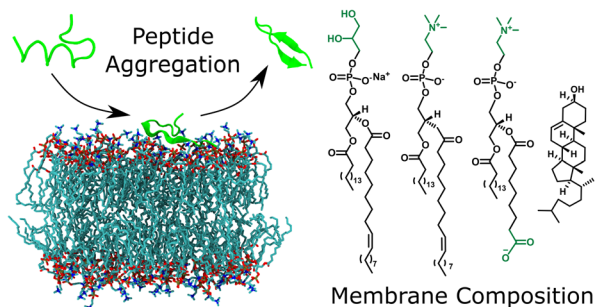


EDGE ARTICLES

3730

Lipid oxidation controls peptide self-assembly near membranes through a surface attraction mechanism

Torsten John,* Stefania Piantavigna, Tiara J. A. Dealey, Bernd Abel, Herre Jelger Risselada and Lisandra L. Martin*



Editorial Staff

Executive Editor

May Copsey

Deputy Editor

Samantha Apps

Senior Editor

James Moore

Scientific Editors

Ellis Crawford, Jingtao Huang, Esther Johnston, Sophie Orchard, Richard Thompson and Amy Welch

Editorial Assistant

Karina Webster

Publishing Assistant

David Bishop

For queries about submitted articles please contact James Moore, Senior Editor, in the first instance. E-mail chemicalscience@rsc.org

For pre-submission queries please contact May Copsey, Executive Editor. E-mail chemicalscience-rsc@rsc.org

Chemical Science (electronic: ISSN 2041-6539) is published 48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK.

Chemical Science is a Gold Open Access journal and all articles from 2015 onwards are free to read.

Please email orders@rsc.org to register your interest or contact Royal Society of Chemistry Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK

Tel +44 (0) 1223 432398; E-mail orders@rsc.org

Whilst this material has been produced with all due care, the Royal Society of Chemistry cannot be held responsible or liable for its accuracy and completeness, nor for any consequences arising from any errors or the use of the information contained in this publication. The publication of advertisements does not constitute any endorsement by the Royal Society of Chemistry or Authors of any products advertised. The views and opinions advanced by contributors do not necessarily reflect those of the Royal Society of Chemistry which shall not be liable for any resulting loss or damage arising as a result of reliance upon this material. The Royal Society of Chemistry is a charity, registered in England and Wales, Number 207890, and a company incorporated in England by Royal Charter (Registered No. RC000524), registered office: Burlington House, Piccadilly, London W1J 0BA, UK, Telephone: +44 (0) 207 4378 6556.

Advertisement sales:

Tel +44 (0) 1223 432246; Fax +44 (0) 1223 426017;

E-mail advertising@rsc.org

For marketing opportunities relating to this journal, contact marketing@rsc.org

Chemical Science

rsc.li/chemical-science

Editorial Board

Editor-in-Chief

Andrew Cooper, University of Liverpool

Associate Editors

Vincent Artero, CEA-Grenoble
Luis M. Campos, Columbia University
Michelle Chang, University of California, Berkeley
Lin X. Chen, Northwestern University
Graeme Day, University of Southampton
Serena DeBeer, Max Planck Institute for Chemical Energy Conversion

Mircea Dincă, MIT

Vy Dong, University of California, Irvine
François Gabbai, Texas A&M University
Subi George, JNCASR
Jinlong Gong, Tianjin University
Stephen Goldup, University of Southampton
Zaiping Guo, University of Adelaide
Christopher A. Hunter, University of Cambridge
Malika Jefferies-EL, Boston University
Ning Jiao, Peking University
Tanja Junkers, Monash University

Hemamala Karunadasa, Stanford University
Maja Köhn, University of Freiburg
Yi-Tao Long, Nanjing University
Gabriel Merino, CINVESTAV Merida
James K. McCusker, Michigan State University
Thomas Meade, Northwestern University
Paolo Melchiorre, University of Bologna
Carsten Schultz, Oregon Health & Science University
Dmitri Talapin, The University of Chicago
Toshiharu Teranishi, Kyoto University
Andrei Yudin, University of Toronto

Advisory Board

Dave Adams, University of Glasgow
Ayyappanpillai Ajayaghosh, NIIST
Ulf-Peter Apfel, Ruhr-University Bochum
Polly Arnold, University of California, Berkeley
Xinhe Bao, Dalian Institute of Chemical Physics
Zhenan Bao, Stanford University
Gonçalo Bernardes, University of Cambridge
Frank Biedermann, Karlsruhe Institute of Technology
Donna Blackmond, Scripps Research Institute
Jeffrey Bode, ETH Zurich
Jennifer S. Brodbelt, University of Texas at Austin, USA
Christopher Chang, University of California, Berkeley
Chi-Ming Che, University of Hong Kong
Jun Chen, Nankai University
R. Graham Cooks, Purdue University
Christophe Copéret, ETH Zurich
Eugenio Coronado, University of Valencia
Leroy Cronin, University of Glasgow
James Crowley, University of Otago
Christopher C. Cummins, Massachusetts Institute of Technology
Ben Davis, University of Oxford
Jillian Dempsey, University of North Carolina at Chapel Hill
Kazunari Domen, University of Tokyo
James Durrant, Imperial College London
Xinlang Feng, TU Dresden
Ben Feringa, University of Groningen
Makoto Fujita, University of Tokyo
Phillip Gale, University of Technology Sydney
Song Gao, Peking University
Jeremiah Gassensmith, University of Texas at Dallas
Elizabeth Gibson, Newcastle University
Ryan Gilmour, WWU Münster
Hubert Girault, EPFL
Frank Glorius, WWU Münster
Leticia González, University of Vienna
Duncan Graham, University of Strathclyde

Vicki Grassian, University of California, San Diego
Alexis Grimaud, Boston College
Christian Hackenberger, FMP Berlin
Buxing Han, Chinese Academy of Sciences
Christy Haynes, University of Minnesota
Patrick Holland, Yale University
Kim Jelfs, Imperial College London
Yousung Jung, KAIST
Stephanie Kath-Schorr, University of Cologne
Takashi Kato, University of Tokyo
Christopher Kelly, Janssen Research & Development
Jérôme Lacour, University of Geneva
Ai-Lan Lee, Heriot-Watt University
Daniele Leonori, RWTH Aachen University
Chao-Jun Li, McGill University
Yi Li, Jilin University
Mi Hee Lim, KAIST
Wenbin Lin, University of Chicago
Kopin Liu, Academia Sinica
Watson Loh, UNICAMP
Bettina Lotsch, Max Planck Institute
Xiong Wen (David) Lou, Nanyang Technological University
Kazuhiko Maeda, Tokyo Institute of Technology
Satoshi Maeda, Hokkaido University
Swadhin Mandal, IISER Kolkata
Ellen Matson, University of Rochester
Scott Miller, Yale University
Daniel Mindiola, University of Pennsylvania
Wonwoo Nam, Ewha Womans University
Jonathan Nitschke, University of Cambridge
Allie Obermeyer, Columbia University
Martin Oestreich, Technical University of Berlin
Takashi Ooi, Nagoya University
Rachel O'Reilly, University of Birmingham
Oleg Ozerov, Texas A&M University
Xiulian Pan, Dalian Institute of Chemical Physics
Nicolas Plummer, Technical University of

Munich
Rasmita Raval, University of Liverpool
Erwin Reisner, University of Cambridge
Andrea Rentmeister, WWU Münster
Jeffrey Rinehart, University of California, San Diego
Stuart Rowan, University of Chicago
Richmond Sarpong, University of California, Berkeley
Danielle Schultz, Merck
Dwight Seferos, University of Toronto
Oliver Seitz, Humboldt University of Berlin
Roberta Sessoli, University of Florence
Kay Severin, Federal Polytechnic School of Lausanne
Mikiko Sodeoka, RIKEN
Galo Soler-Illia, Universidad Nacional de San Martin
David Spring, University of Cambridge
Brian Stoltz, California Institute of Technology
Brent Sumerlin, University of Florida
Raghavan B. Sunoj, IIT Bombay
Yogesh Surendranath, MIT
Mizuki Tada, Nagoya University
Ben Zhong Tang, The Hong Kong University of Science and Technology
Zhiyong Tang, National Center for Nanoscience and Nanotechnology
Christine Thomas, Ohio State University
He Tian, East China University of Science & Technology
Zhong-Qun Tian, Xiamen University
F. Dean Toste, University of California, Berkeley
Takashi Uemura, University of Tokyo
Jan van Hest, Radboud University
Latha Venkataraman, Columbia University
Chu Wang, Peking University
Julia Weinstein, University of Sheffield
Tom Welton, Imperial College London
Charlotte Williams, University of Oxford
Vivian Yam, University of Hong Kong
Qi-Lin Zhou, Nankai University
Jenny Zhang, University of Cambridge

Information for Authors

Full details on how to submit material for publication in Chemical Science are given in the Instructions for Authors (available from <http://www.rsc.org/authors>). Submissions should be made via the journal's homepage: rsc.li/chemical-science

Authors may reproduce/republish portions of their published contribution without seeking permission from the Royal Society of Chemistry, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)–Reproduced by permission of the Royal Society of Chemistry.

This journal is © The Royal Society of Chemistry 2023.

Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulation 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US copyright law is applicable to users in the USA.

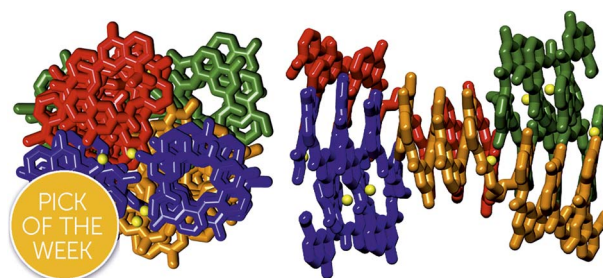
Registered charity number: 207890



3742

An abiotic, tetrameric, eight-helix bundle

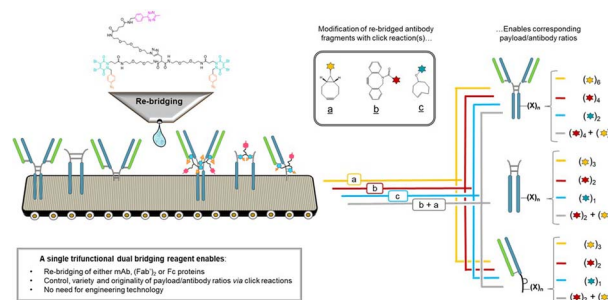
Friederike S. Menke, Barbara Wicher, Lars Allmendinger, Victor Maurizot and Ivan Huc*



3752

Enabling the formation of native mAb, Fab' and Fc-conjugates using a bis-disulfide bridging reagent to achieve tunable payload-to-antibody ratios (PARs)

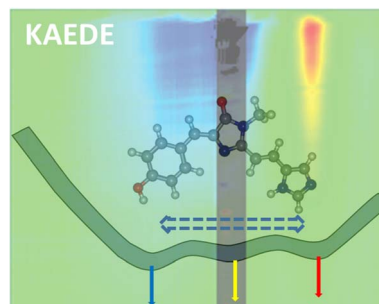
Fabien Thoreau,* Léa N. C. Rochet, James R. Baker* and Vijay Chudasama*



3763

Photophysics of the red-form Kaede chromophore

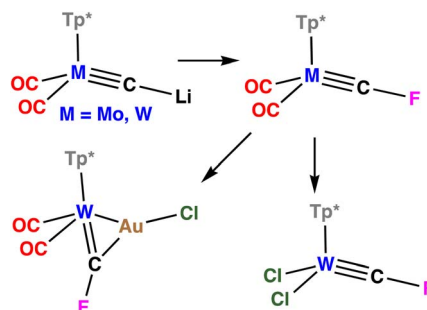
Kiri Addison, Palas Roy, Giovanni Bressan, Karolina Skudaite, Josh Robb, Philip C. Bulman Page, Eleanor K. Ashworth, James N. Bull and Stephen R. Meech*



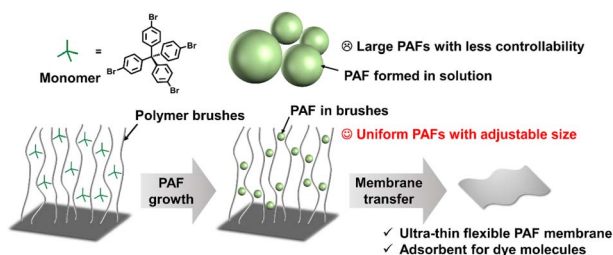
3776

Fluorocarbyne complexes *via* electrophilic fluorination of carbido ligands

Richard A. Manzano and Anthony F. Hill*



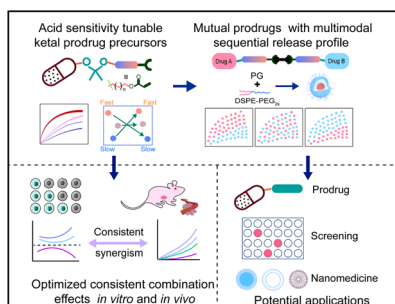
3782



Tailored preparation of porous aromatic frameworks in a confined environment

Ruihe Yu, Lin Liu, Liying Yin, Yege Jing, Ning Zhang,*
Hang Bian* and Guangshan Zhu*

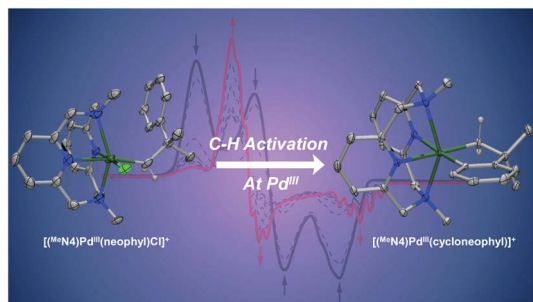
3789



Fine-tuning the sequential drug release of nano-formulated mutual prodrugs dictates the combination effects

Haiping Zhong, Xingwei Li, Na Yu, Xi Zhang, Jingqing Mu,
Tao Liu, Bo Yuan, Xiaoyong Yuan and Shutao Guo*

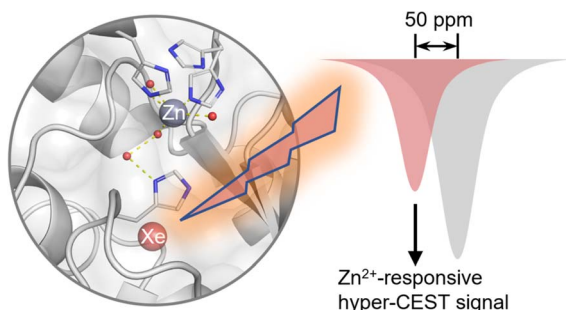
3800



C–H bond activation *via* concerted metalation–deprotonation at a palladium(III) center

Bailey S. Bouley, Fengzhi Tang, Dae Young Bae and
Livi M. Mirica*

3809



Rational design of a genetically encoded NMR zinc sensor

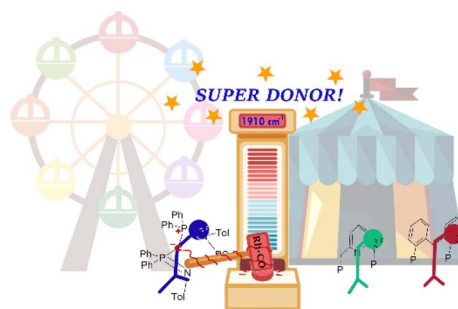
Zhuangyu Zhao, Mingyang Zhou, Serge D. Zemerov,
Ronen Marmorstein and Ivan J. Dmochowski*



3816

Probing the donor strength of yldiide ligands: synthesis, structure and reactivity of rhodium complexes with a PC_{yldiide}N pincer ligand

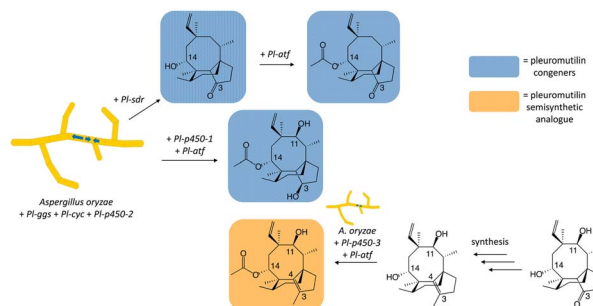
Sébastien Lapointe, Prakash Duari and Viktoria H. Gessner*



3826

Biosynthesis of pleuromutilin congeners using an *Aspergillus oryzae* expression platform

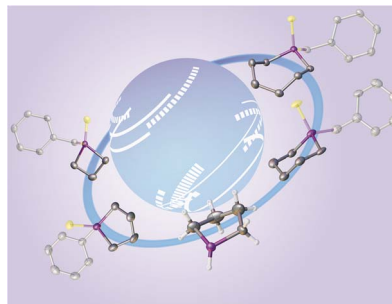
Fabrizio Alberti,* Khairunisa Khairudin, Jonathan A. Davies, Suphattra Sangmalee, Christine L. Willis, Gary D. Foster and Andy M. Bailey*



3834

Novel synthetic route for (parent) phosphetanes, phospholanes, phosphinanes and phosphepanes

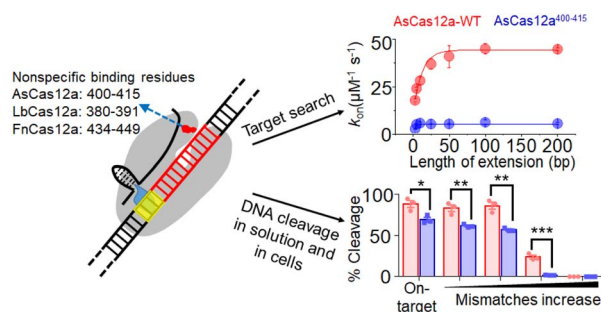
Stephan Reichl, Gábor Balázs and Manfred Scheer*



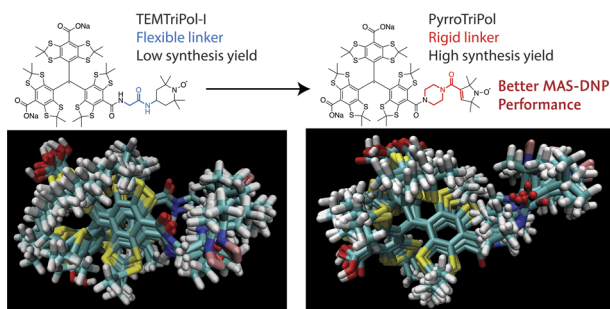
3839

Nonspecific interactions between Cas12a and dsDNA located downstream of the PAM mediate target search and assist AsCas12a for DNA cleavage

Ruirui Sun, Yuqian Zhao, Wenjuan Wang, Jun-Jie Gogo Liu and Chunlai Chen*



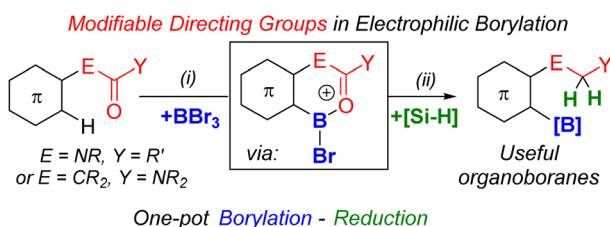
3852



PyrroTriPol: a semi-rigid trityl-nitroxide for high field dynamic nuclear polarization

Thomas Halbritter, Rania Harrabi, Subhradip Paul, Johan van Tol, Daniel Lee, Sabine Hediger, Snorri Th. Sigurdsson,* Frédéric Mentink-Vigier* and Gaël De Paëpe*

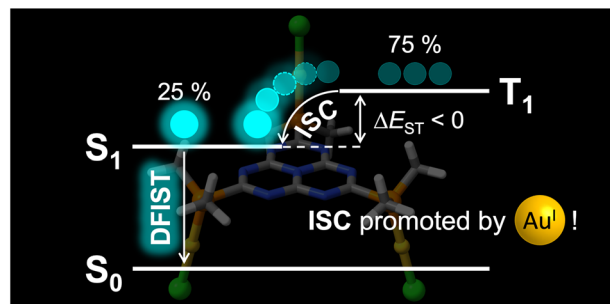
3865



Amides as modifiable directing groups in electrophilic borylation

Saqib A. Iqbal, Marina Uzelac, Ismat Nawaz, Zhongxing Wang, T. Harri Jones, Kang Yuan, Clement R. P. Millet, Gary S. Nichol, Ghayoor Abbas Chotana and Michael J. Ingleson*

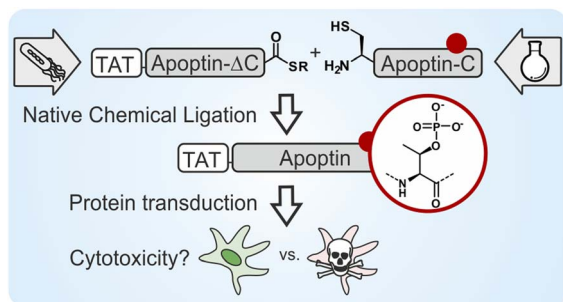
3873



Gold(I)-containing light-emitting molecules with an inverted singlet–triplet gap

Daniel Blasco, Rinat T. Nasibullin, Rashid R. Valiev and Dage Sundholm*

3881



Semisynthesis reveals apoptin as a tumour-selective protein prodrug that causes cytoskeletal collapse

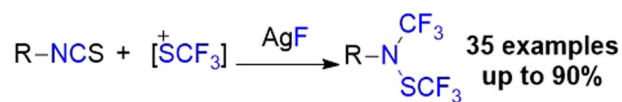
Jasmine Wyatt, Yuen Ka Chan, Mateusz Hess, Mahvash Tavassoli* and Manuel M. Müller*



3893

Novel N(SCF₃)(CF₃)-amines: synthesis, scalability and stability

Yi Yang, Nathalie Saffon-Merceron, Julien C. Vantourout and Anis Tlili*

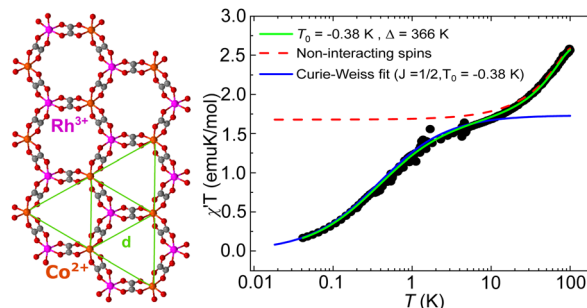


- New motif - 2 sets of conditions - Scalable

3899

A quantum spin liquid candidate isolated in a two-dimensional Co^{II}Rh^{III} bimetallic oxalate network

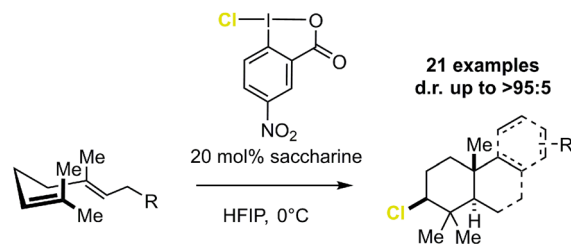
Enrique Burzuri*, María José Martínez-Pérez, Carlos Martí-Gastaldo, Marco Evangelisti, Samuel Mañas-Valero, Eugenio Coronado, Jesús I. Martínez, Jose Ramon Galan-Mascaros and Fernando Luis*



3907

Biomimetic chlorine-induced polyene cyclizations harnessing hypervalent chloroiodane–HFIP assemblies

Julia Binder, Aniruddha Biswas and Tanja Gulder*



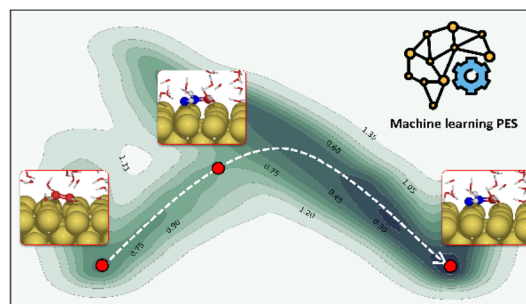
Bio-inspired concept for emulating the cyclization phase

+ activating Cl⁺ + controlling conformation + stabilizing polar intermediates

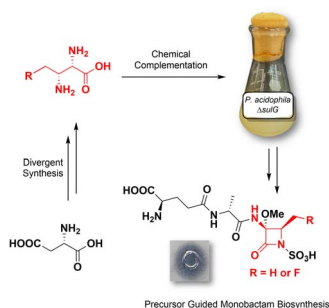
3913

Neural network potentials for accelerated metadynamics of oxygen reduction kinetics at Au–water interfaces

Xin Yang, Arghya Bhowmik, Tejs Vegge and Heine Anton Hansen*



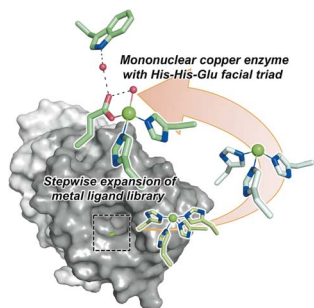
3923



Synthesis of functionalized 2,3-diaminopropionates and their potential for directed monobactam biosynthesis

Michael S. Lichstrahl, Lukas Kahlert, Rongfeng Li, Trevor A. Zandi, Jerry Yang and Craig A. Townsend*

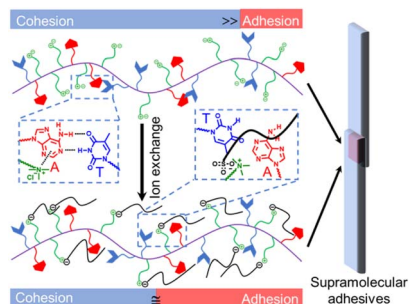
3932



An artificial metallolyase with pliable 2-His-1-carboxylate facial triad for stereoselective Michael addition

Ryusei Matsumoto, Saho Yoshioka, Miho Yuasa, Yoshitsugu Morita, Genji Kurisu and Nobutaka Fujieda*

3938



Bioinspired nucleobase-containing polyelectrolytes as robust and tunable adhesives by balancing the adhesive and cohesive properties

Zhi Dong, Jiang Wu, Xinyi Shen, Zan Hua* and Guangming Liu*

