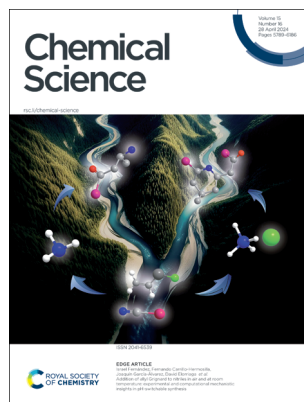


IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 15(16) 5789–6186 (2024)



Cover
See Hannah S. Shafaat *et al.*, pp. 5916–5928. Image reproduced by permission of Luke C. Lewis from *Chem. Sci.*, 2024, 15, 5916.



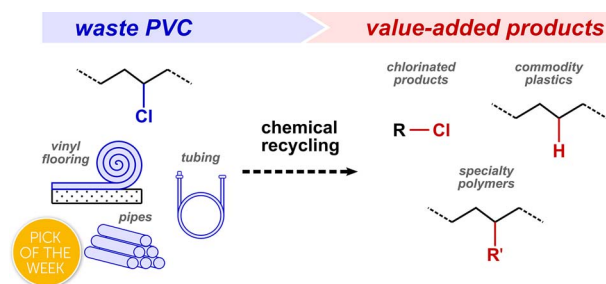
Inside cover
See Israel Fernández, Fernando Carrillo-Hermosilla, Joaquín García-Álvarez, David Elorriaga *et al.*, pp. 5929–5937. Image reproduced by permission of Clara Becedóniz Plasencia from *Chem. Sci.*, 2024, 15, 5929.

PERSPECTIVES

5802

Revisiting poly(vinyl chloride) reactivity in the context of chemical recycling

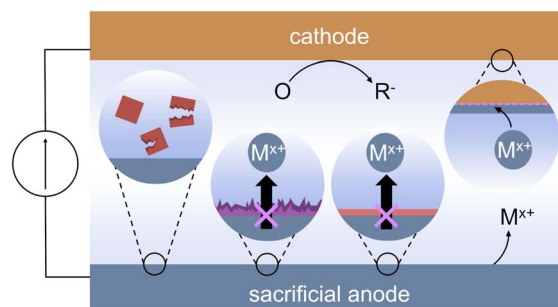
Rahul Kant Jha, Bertrand J. Neyhouse, Morgan S. Young, Danielle E. Fagnani and Anne J. McNeil*



5814

A guide to troubleshooting metal sacrificial anodes for organic electrosynthesis

Skyler D. Ware, Wendy Zhang, Weiyang Guan, Song Lin and Kimberly A. See*



Advance your career in science

with professional recognition that showcases
your **experience, expertise and dedication**

Stand out from the crowd

Prove your commitment
to attaining excellence in
your field

Gain the recognition you deserve

Achieve a professional
qualification that inspires
confidence and trust

Unlock your career potential

Apply for our professional
registers (RSci, RSciTech)
or chartered status
(CChem, CSci, CEnv)

Apply now

rsc.li/professional-development

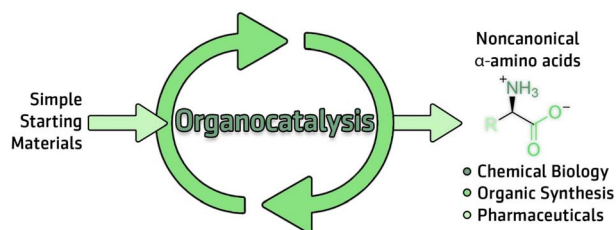


PERSPECTIVES

5832

Enantioselective organocatalytic strategies to access noncanonical α -amino acids

Pietro Pecchini, Mariafrancesca Fochi, Francesca Bartocchini, Giovanni Piersanti* and Luca Bernardi*

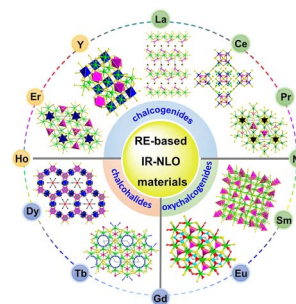


REVIEWS

5869

Rare-earth-based chalcogenides and their derivatives: an encouraging IR nonlinear optical material candidate

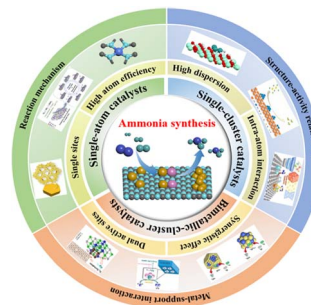
Ping Feng, Jia-Xiang Zhang, Mao-Yin Ran, Xin-Tao Wu, Hua Lin* and Qi-Long Zhu*



5897

Single-atom and cluster catalysts for thermocatalytic ammonia synthesis at mild conditions

Xuanbei Peng, Mingyuan Zhang, Tianhua Zhang, Yanliang Zhou,* Jun Ni, Xiuyun Wang* and Lilong Jiang*

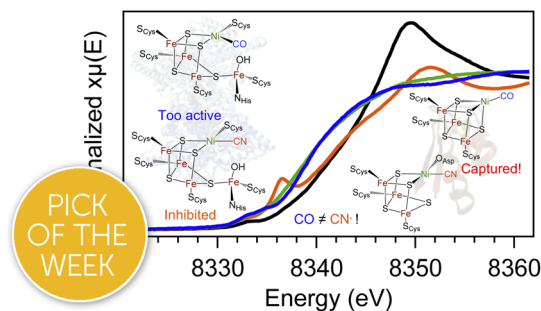


EDGE ARTICLES

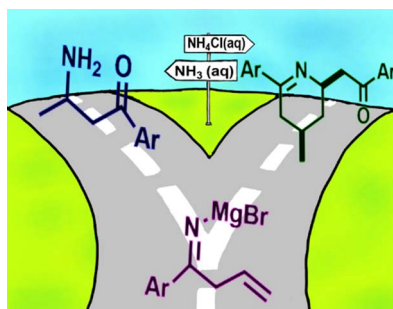
5916

Electronic isomerism in a heterometallic nickel–iron–sulfur cluster models substrate binding and cyanide inhibition of carbon monoxide dehydrogenase

Luke C. Lewis, José A. Sanabria-Gracia, Yuri Lee, Adam J. Jenkins and Hannah S. Shafaat*



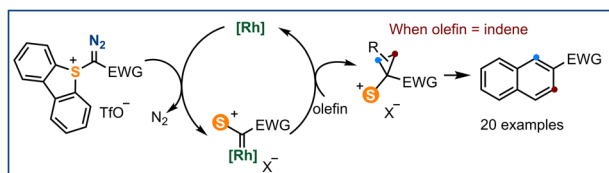
5929



Addition of allyl Grignard to nitriles in air and at room temperature: experimental and computational mechanistic insights in pH-switchable synthesis

Blanca Parra-Cadenas, Israel Fernández,^{*}
Fernando Carrillo-Hermosilla,^{*} Joaquín García-Álvarez^{*}
and David Elorriaga^{*}

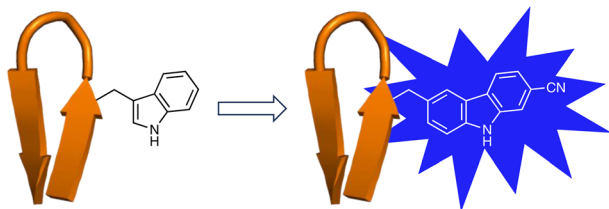
5938



Reactivity of α -diazo sulfonium salts: rhodium-catalysed ring expansion of indenenes to naphthalenes

Sven Timmann, Tun-Hui Wu, Christopher Golz
and Manuel Alcarazo^{*}

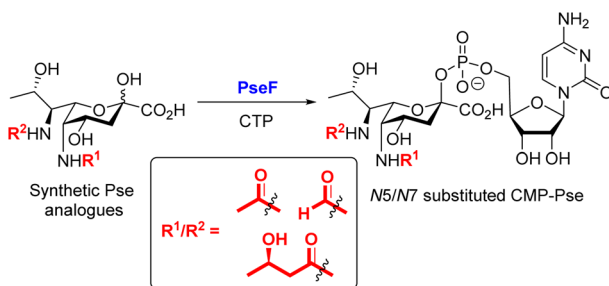
5944



Fluorescent carbazole-derived α -amino acids: structural mimics of tryptophan

Rebecca Clarke, Liyao Zeng, Bethany C. Atkinson,
Malcolm Kadodwala, Andrew R. Thomson^{*}
and Andrew Sutherland^{*}

5950



Investigation on the substrate specificity and *N*-substitution tolerance of PseF in catalytic transformation of pseudaminic acids to CMP-Pse derivatives

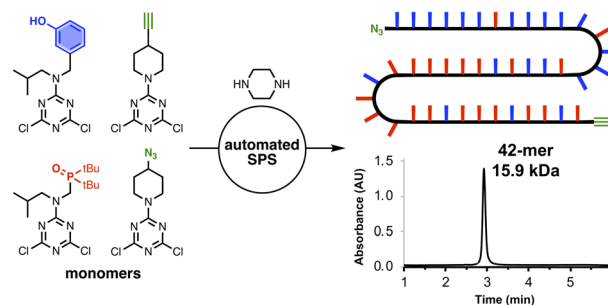
Xing Guo, Yan Chu Cheung, Can Li, Han Liu,^{*} Pengfei Li,^{*}
Sheng Chen^{*} and Xuechen Li^{*}



5957

Efficient automated solid-phase synthesis of recognition-encoded melamine oligomers

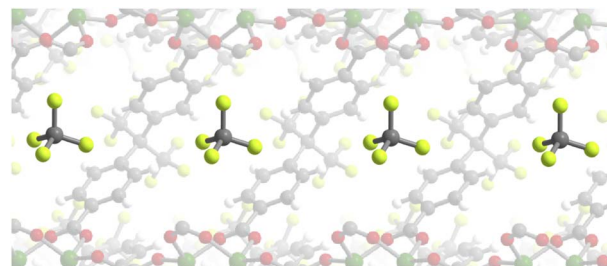
Mohit Dhiman, Rafel Cabot and Christopher A. Hunter*



5964

Selective adsorption of fluorinated super greenhouse gases within a metal–organic framework with dynamic corrugated ultramicropores

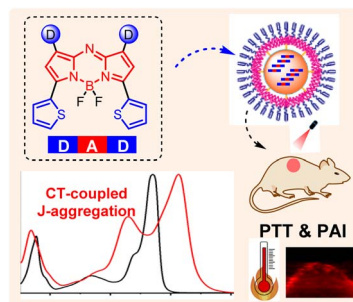
Bevan S. Whitehead, William W. Brennessel, Shane S. Michtavy, Hope A. Silva, Jaehwan Kim, Phillip J. Milner, Marc D. Porosoff and Brandon R. Barnett*



5973

Rational design of CT-coupled J-aggregation platform based on Aza-BODIPY for highly efficient phototherapy

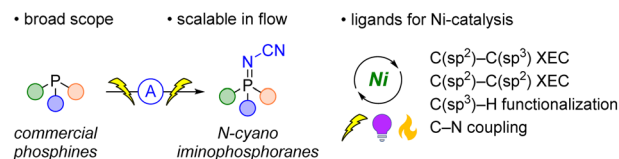
Shengmei Wu, Wenze Zhang, Chaoran Li, Zhigang Ni, Weifeng Chen, Lizhi Gai,* Jiangwei Tian,* Zijian Guo and Hua Lu*



5980

Electrosynthesis of iminophosphoranes and applications in nickel catalysis

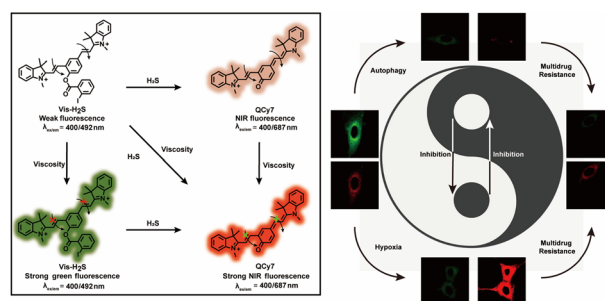
Velabo Mdluli, Dan Lehnerr,* Yu-hong Lam,* Mohammad T. Chaudhry, Justin A. Newman, Jimmy O. DaSilva and Erik L. Regalado



6028

Near-infrared imaging for visualizing the synergistic relationship between autophagy and NFS1 protein during multidrug resistance using an ICT–TICT integrated platform

Wei Hu, Yifan He, Haixian Ren,* Li Chai, Haiyan Li, Jianbin Chen, Chunya Li,* Yanying Wang* and Tony D. James*



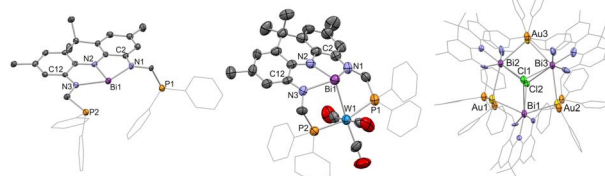
6036

Combining geometric constraint and redox non-innocence within an ambiphilic PBiP pincer ligand

Peter Coburger, Ana Guilherme Buzanich, Franziska Emmerling and Josh Abbenseth*

Transition Metal Complexes of a Redox Active PBiP Pincer Ligand

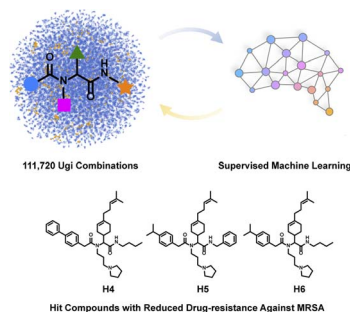
- Combination of Geometric Constraint and a Redox Active Support
- Ambiphilic Bi–M bonding in Coordination Compounds
- Bonding Analysis via XANES, XRD, UV/vis and (TD)-DFT



6044

Combinatorial discovery of antibacterials via a feature-fusion based machine learning workflow

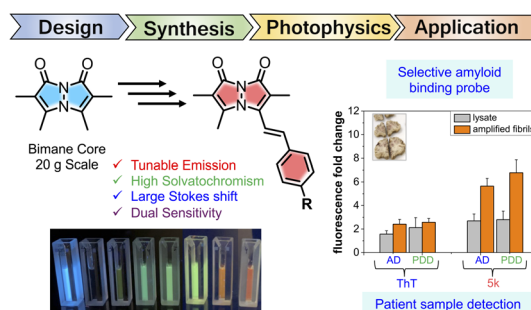
Cong Wang, Yuhui Wu, Yunfan Xue, Lingyun Zou, Yue Huang, Peng Zhang* and Jian Ji*



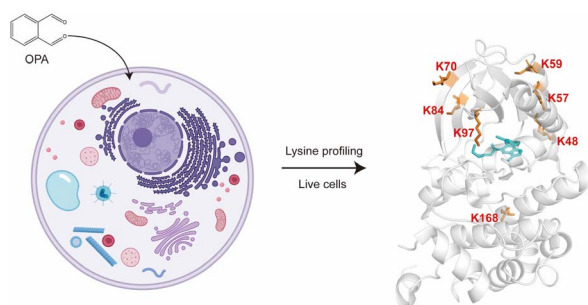
6053

Highly tunable bimane-based fluorescent probes: design, synthesis, and application as a selective amyloid binding dye

Yarra Venkatesh, Nicholas P. Marotta, Virginia M.-Y. Lee and E. James Petersson*



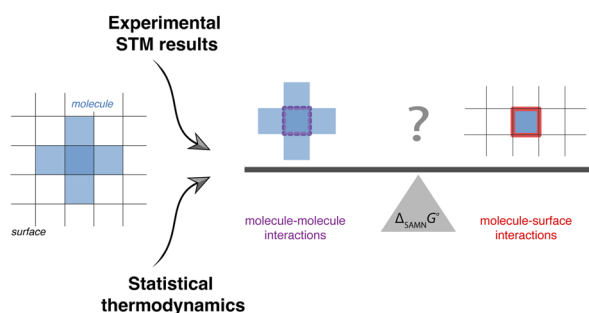
6064



Protein painting for structural and binding site analysis *via* intracellular lysine reactivity profiling with *o*-phthalaldehyde

Zhenxiang Zheng, Ya Zeng, Kunjia Lai, Bin Liao, Pengfei Li and Chris Soon Heng Tan*

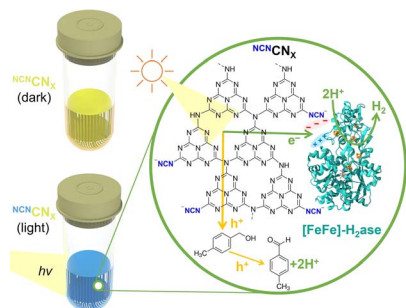
6076



On the origin of cooperativity effects in the formation of self-assembled molecular networks at the liquid/solid interface

Tamara Rinkovec, Demian Kalebic, Wim Dehaen, Stephen Whitelam, Jeremy N. Harvey* and Steven De Feyter*

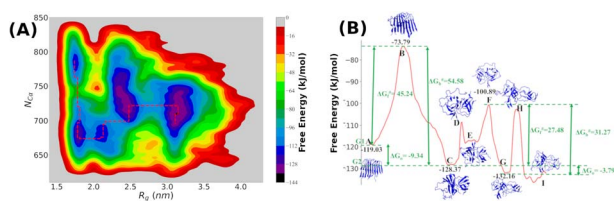
6088



Electrostatic [FeFe]-hydrogenase-carbon nitride assemblies for efficient solar hydrogen production

Yongpeng Liu, Carolina Pulignani, Sophie Webb, Samuel J. Cobb, Santiago Rodríguez-Jiménez, Dongseok Kim, Ross D. Milton and Erwin Reisner*

6095



Can local heating and molecular crowders disintegrate amyloid aggregates?

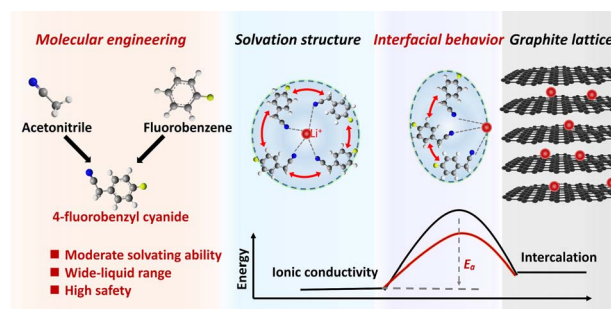
Naresh Kumar, Prabir Khatua and Sudipta Kumar Sinha



6106

4-Fluorobenzyl cyanide, a sterically-hindered solvent expediting interfacial kinetics in lithium-ion batteries

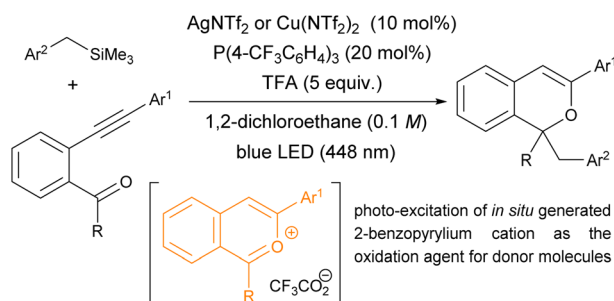
Mingsheng Qin, Ziqi Zeng,* Qiang Wu, Xiaowei Liu, Qijun Liu, Shijie Cheng and Jia Xie*



6115

Consecutive π -Lewis acidic metal-catalysed cyclisation/photochemical radical addition promoted by *in situ* generated 2-benzopyrylium as the photoredox catalyst

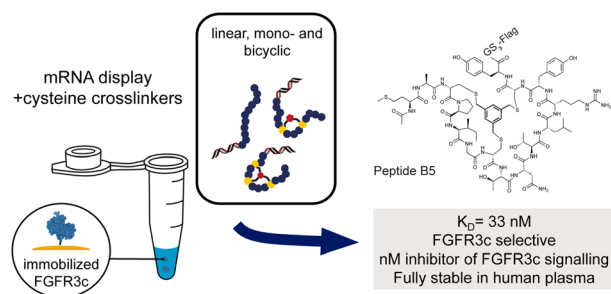
Masahiro Terada,* Ryohei Yazaki, Ren Obayashi, Zen Iwasaki, Shigenobu Umemiya and Jun Kikuchi



6122

An efficient mRNA display protocol yields potent bicyclic peptide inhibitors for FGFR3c: outperforming linear and monocyclic formats in affinity and stability

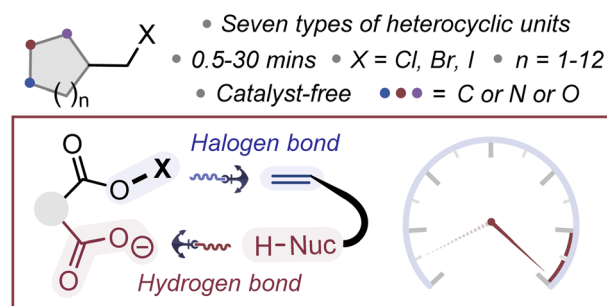
Camille Villequey,* Silvana S. Zurmühl, Christian N. Cramer, Bhaskar Bhusan, Birgitte Andersen, Qianshen Ren, Haimo Liu, Xinping Qu, Yang Yang, Jia Pan, Qiuqia Chen and Martin Münzel



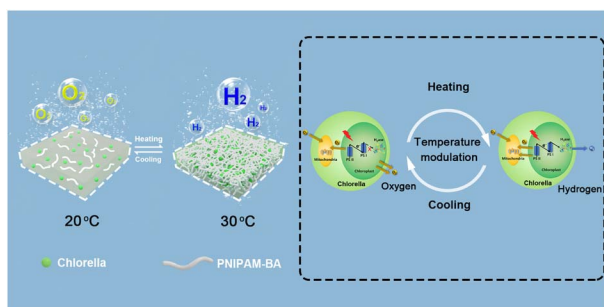
6130

Intramolecular chaperone-assisted dual-anchoring activation (ICDA): a suitable preorganization for electrophilic halocyclization

Xihui Yang, Haowei Gao, Jiale Yan, Jia Zhou* and Lei Shi*



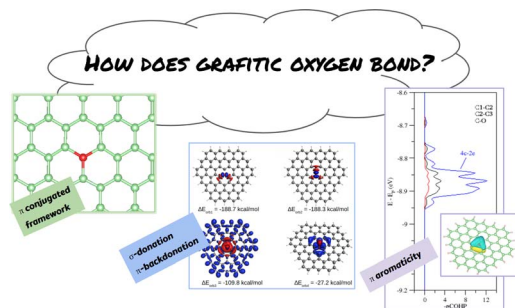
6141



Temperature modulated sustainable on/off photosynthesis switching of microalgae towards hydrogen evolution

Shangsong Li, Zhijun Xu, Song Lin, Luxuan Li, Yan Huang, Xin Qiao and Xin Huang*

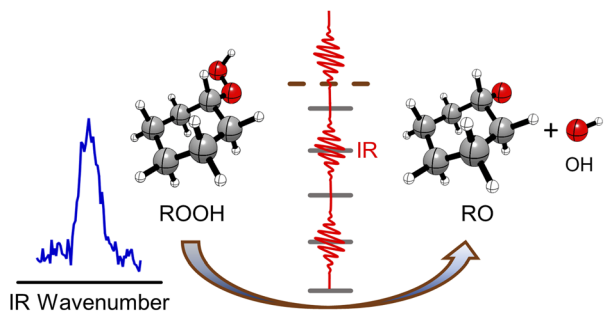
6151



Deciphering the chemical bonding of the trivalent oxygen atom in oxygen doped graphene

Andoni Ugartemendia, Irene Casademont-Reig, Lili Zhao, Zuxian Zhang, Gernot Frenking, Jesus M. Ugalde, Aran Garcia-Lekue* and Elisa Jimenez-Izal*

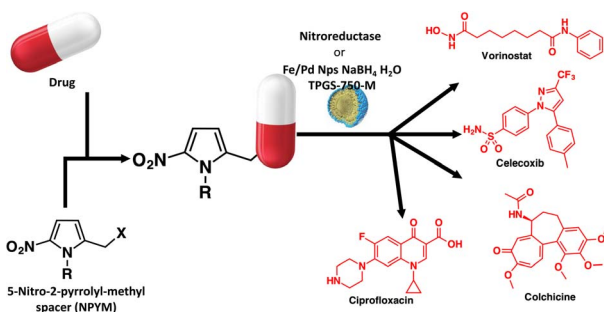
6160



Vibrational spectroscopy and dissociation dynamics of cyclohexyl hydroperoxide

Tarun Kumar Roy, Yujie Qian, Elizabeth Karlsson, Rawan Rabayah, Christopher A. Sojda, Marisa C. Kozłowski, Tolga N. V. Karsili and Marsha I. Lester*

6168



A novel bioresponsive self-immolative spacer based on aza-quinone methide reactivity for the controlled release of thiols, phenols, amines, sulfonamides or amides

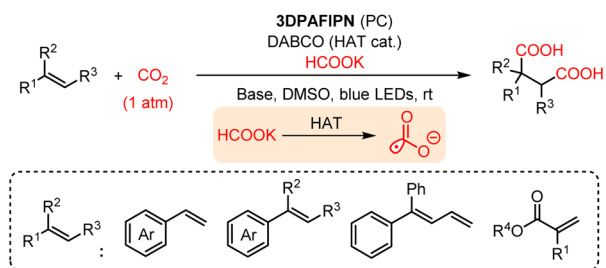
Elena Ermini, Annalaura Brai, Elena Cini, Federica Finetti, Giuseppe Giannini, Daniele Padula, Lucrezia Paradisi, Federica Poggialini, Lorenza Trabalzini, Paola Tolu and Maurizio Taddei*



6178

Visible-light-driven alkene dicarboxylation with formate and CO₂ under mild conditions

Fulin Zhang, Xiao-Yang Wu, Pan-Pan Gao, Hao Zhang, Zhu Li, Shangde Ai and Gang Li*



■ simple styrenes tolerated ■ low-cost reagent ■ hydrocarboxylation overridden

