

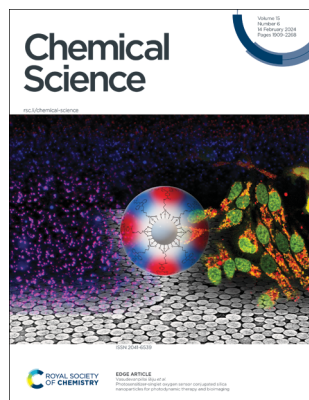
Chemical Science

rsc.li/chemical-science

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

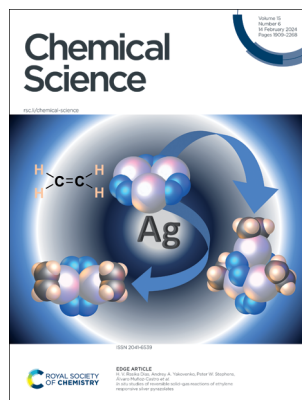
IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 15(6) 1909–2268 (2024)



Cover

See Vasudevanpillai Biju *et al.*, pp. 2007–2018. Image reproduced by permission of Vasudevanpillai Biju from *Chem. Sci.*, 2024, 15, 2007.



Inside cover

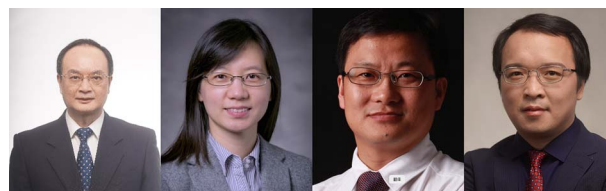
See H. V. Rasika Dias, Andrey A. Yakovenko, Peter W. Stephens, Álvaro Muñoz-Castro *et al.*, pp. 2019–2025. Image reproduced by permission of H. V. Rasika Dias from *Chem. Sci.*, 2024, 15, 2019.

EDITORIAL

1921

Celebrating the 130th anniversary of Wuhan University

Lin Zhuang, Qiu Wang, Aiwen Lei and Qianghui Zhou

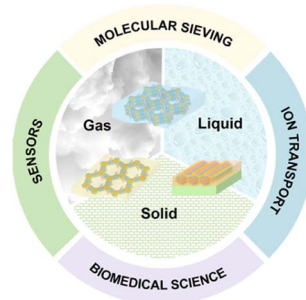


PERSPECTIVES

1924

Porous organic framework membranes based on interface-induced polymerisation: design, synthesis and applications

Lin Liu, Ruihe Yu, Liying Yin, Ning Zhang* and Guangshan Zhu*



EES Catalysis

GOLD
OPEN
ACCESS

**Exceptional research on energy
and environmental catalysis**

Open to everyone. Impactful for all

rsc.li/EESCatalysis

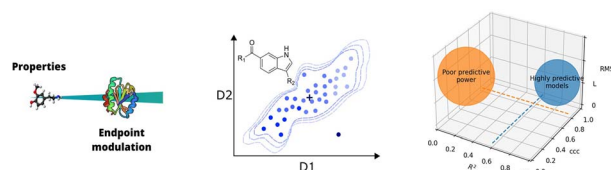
**Fundamental questions
Elemental answers**

PERSPECTIVES

1938

The pursuit of accurate predictive models of the bioactivity of small molecules

Karina Martinez-Mayorga,* José G. Rosas-Jiménez,
Karla Gonzalez-Ponce, Edgar Lopez-Lopez,
Antonio Neme and José L. Medina-Franco

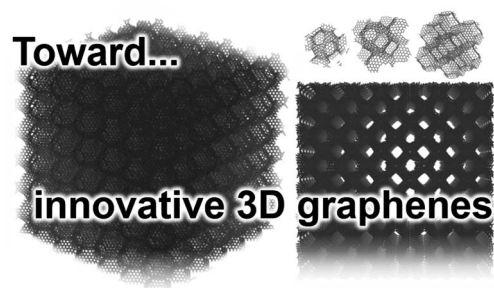


REVIEWS

1953

Toward three-dimensionally ordered nanoporous graphene materials: template synthesis, structure, and applications

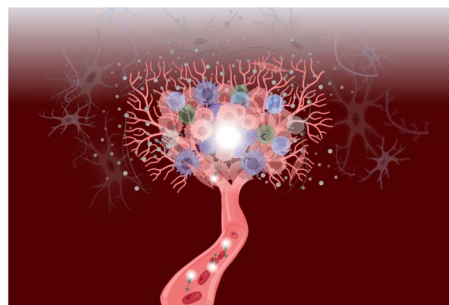
Masanori Yamamoto,* Shunsuke Goto, Rui Tang
and Kaoru Yamazaki*



1966

Package delivered: folate receptor-mediated transporters in cancer therapy and diagnosis

Mohsen Ahmadi,* Christoph A. Ritter,
Thomas von Woedtke, Sander Bekeschus
and Kristian Wende*

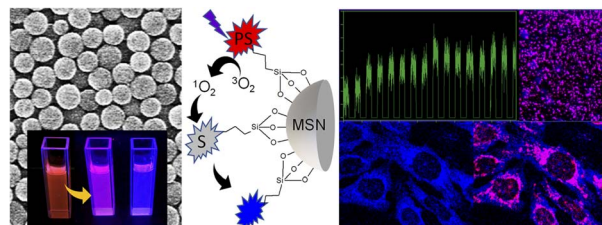


EDGE ARTICLES

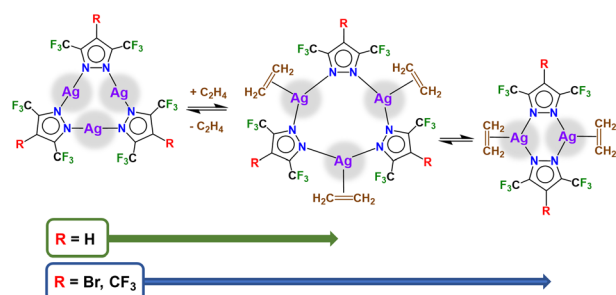
2007

Photosensitizer-singlet oxygen sensor conjugated silica nanoparticles for photodynamic therapy and bioimaging

Jeladhara Sobhanan, Kenji Ono, Takuya Okamoto,
Makoto Sawada, Paul S. Weiss and Vasudevanpillai Biju*



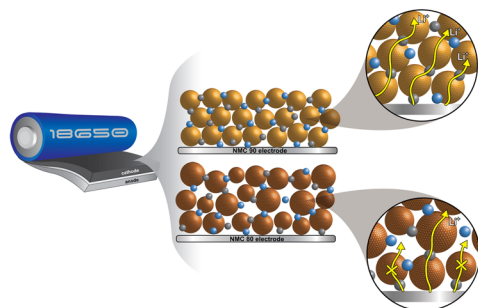
2019



In situ studies of reversible solid–gas reactions of ethylene responsive silver pyrazolates

H. V. Rasika Dias,^{*} Devaborhini Parasara,^{*} Andrey A. Yakovenko,^{*} Peter W. Stephens,^{*} Álvaro Muñoz-Castro,^{*} Mukundam Vanga, Pavel Mykhailiuk and Evgeniy Slobodyanyuk

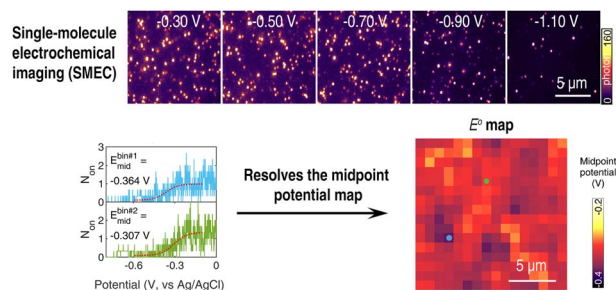
2026



How uniform particle size of NMC90 boosts lithium ion mobility for faster charging and discharging in a cylindrical lithium ion battery cell

Nichakarn Anansuksawat, Thitiphum Sangsanit, Surat Prempluem, Kan Homlamai, Worapol Tejangkura and Montree Sawangphruk^{*}

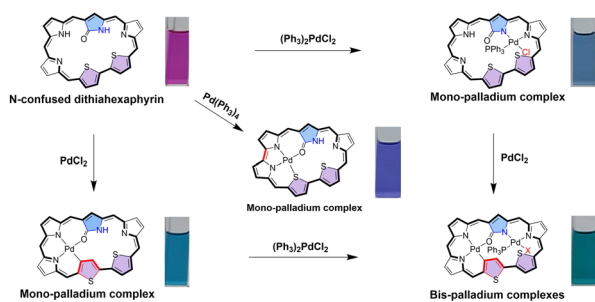
2037



Single-molecule electrochemical imaging resolves the midpoint potentials of individual fluorophores on nanoporous antimony-doped tin oxide

Jin Lu^{*} and Matthew D. Lew^{*}

2047



Mono- and bis-Pd(II) complexes of N-confused dithiahexaphyrin(1.1.1.1.1.0) with the absorption and aromaticity modulated by Pd(II) coordination, macrocycle contraction and ancillary ligands

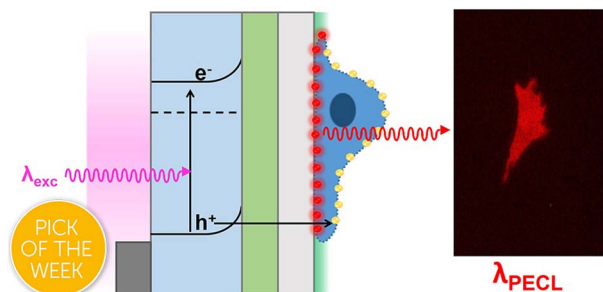
Meng Sun, Yongshu Xie,^{*} Glib Baryshnikov, Chengjie Li, Feng Sha, Xinyan Wu, Hans Ågren, Shijun Li and Qizhao Li^{*}



2055

Infrared photoinduced electrochemiluminescence microscopy of single cells

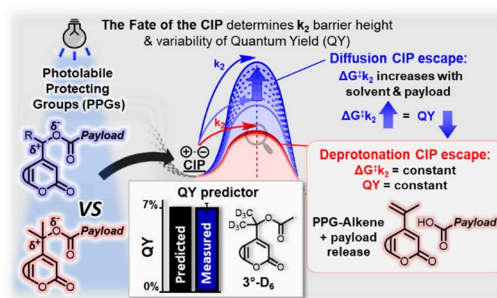
Julie Descamps, Yiran Zhao, Bertrand Goudeau, Dragan Manojlovic, Gabriel Loget* and Neso Sojic*



2062

The fate of the contact ion pair determines the photochemistry of coumarin-based photocleavable protecting groups

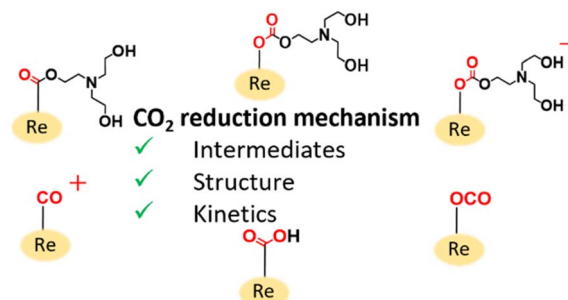
Albert Marten Schulte, Georgios Alachouzos*, Wiktor Szymanski* and Ben L. Feringa*



2074

Overall reaction mechanism of photocatalytic CO₂ reduction on a Re(I)-complex catalyst unit of a Ru(II)-Re(I) supramolecular photocatalyst

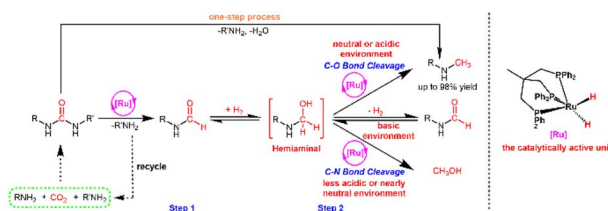
Kei Kamogawa, Yuki Kato*, Yusuke Tamaki, Takumi Noguchi, Koichi Nozaki, Tatsuo Nakagawa and Osamu Ishitani*



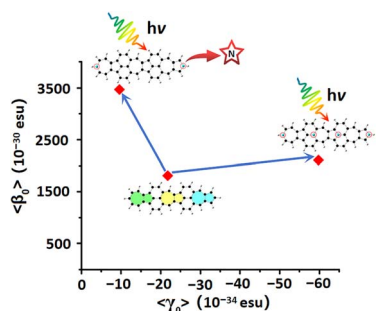
2089

Switching the hydrogenation selectivity of urea derivatives *via* subtly tuning the amount and type of additive in the catalyst system

Jun Zhu, Yongtao Wang, Jia Yao and Haoran Li*



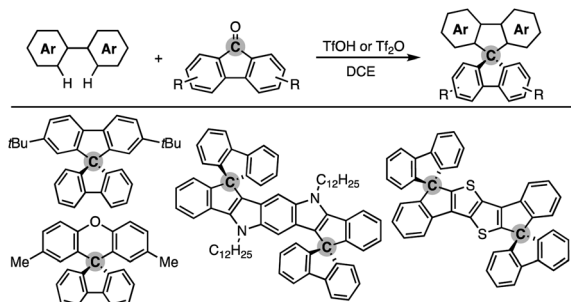
2100



The enhancement of nonlinear optical properties of azulene-based nanographene by N atoms: a finishing touch

Ya Qing Zhang, Cui-Cui Yang, Jia-Ying Ma and Wei Quan Tian*

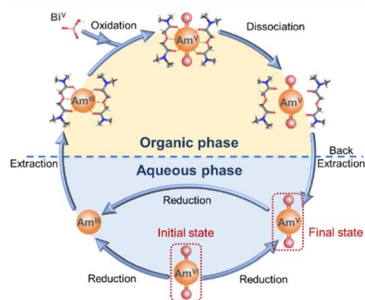
2112



Direct synthesis of spirobifluorenes by formal dehydrative coupling of biaryls and fluorenones

Yugo Kato, Kazutoshi Nishimura, Yuji Nishii and Koji Hirano*

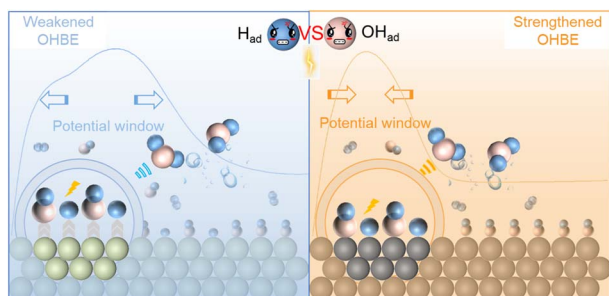
2118



Redox stabilization of Am(V) in a biphasic extraction system boosts americium/lanthanides separation efficiency

Xue Dong, Huaixin Hao, Jing Chen, Zhipeng Wang* and Chao Xu*

2123



Alleviating the competitive adsorption of hydrogen and hydroxyl intermediates on Ru by d-p orbital hybridization for hydrogen electrooxidation

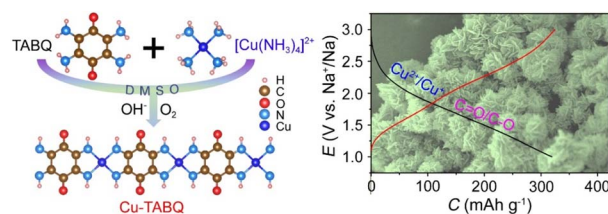
Youkai Feng, Siguang Lu, Luhong Fu, Fulin Yang* and Ligang Feng*



2133

Copper and conjugated carbonyls of metal–organic polymers as dual redox centers for Na storage

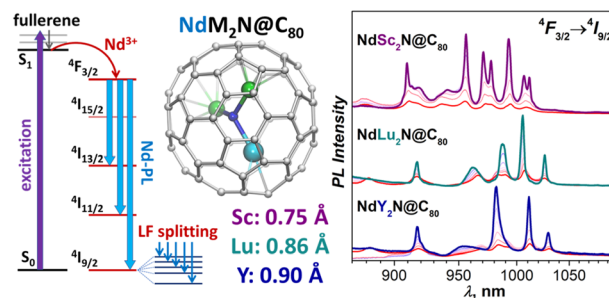
Liubin Wang,* Ningbo Liu, Xiaoying Zhao, Xiaohan Wang, Tong Zhang, Zhiqiang Luo* and Fujun Li*



2141

Covalency *versus* magnetic axiality in Nd molecular magnets: Nd-photoluminescence, strong ligand-field, and unprecedented nephelauxetic effect in fullerenes NdM₂N@C₈₀ (M = Sc, Lu, Y)

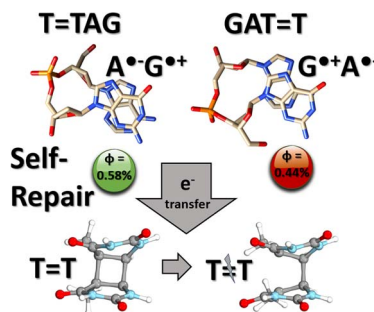
Wei Yang, Marco Rosenkranz, Georgios Velkos, Frank Ziegls, Vasilii Dubrovin, Sandra Schiemenz, Lukas Spree, Matheus Felipe de Souza Barbosa, Charles Guillemard, Manuel Valvidares, Bernd Büchner, Fupin Liu,* Stanislav M. Avdoshenko* and Alexey A. Popov*



2158

Photoinduced charge separation and DNA self-repair depend on sequence directionality and stacking pattern

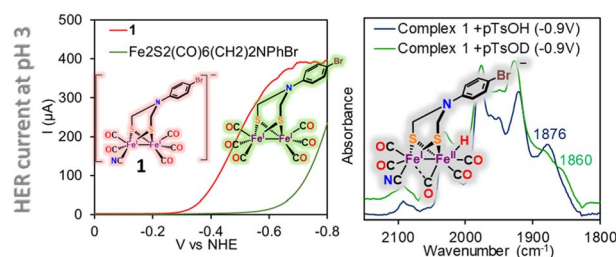
Corinna L. Kufner,* Sarah Crucilla, Dian Ding, Petr Stadlbauer, Jiří Šponer, Jack W. Szostak, Dimitar D. Sassellov and Rafat Szabla*



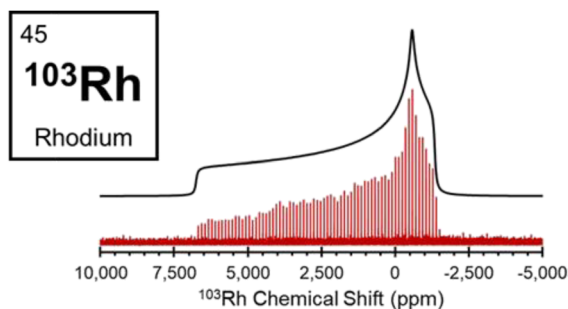
2167

Facile electrocatalytic proton reduction by a [Fe–Fe]–hydrogenase bio-inspired synthetic model bearing a terminal CN⁻ ligand

Abhijit Nayek, Subal Dey, Suman Patra, Atanu Rana, Pauline N. Serrano, Simon J. George, Stephen P. Cramer, Somdatta Ghosh Dey* and Abhishek Dey*



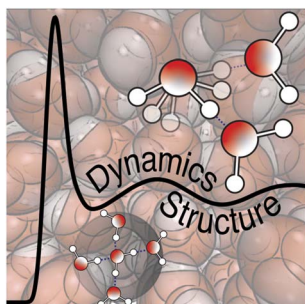
2181



Structure and bonding in rhodium coordination compounds: a ^{103}Rh solid-state NMR and relativistic DFT study

Sean T. Holmes, Jasmin Schönzart, Adam B. Philips, James J. Kimball, Sara Termos, Adam R. Altenhof, Yijue Xu, Christopher A. O'Keefe, Jochen Autschbach* and Robert W. Schurko*

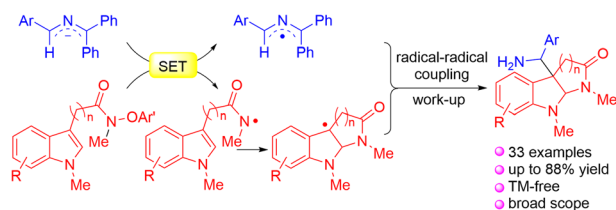
2197



A structure–dynamics relationship enables prediction of the water hydrogen bond exchange activation energy from experimental data

Zeke A. Piskulich*, Damien Laage* and Ward H. Thompson*

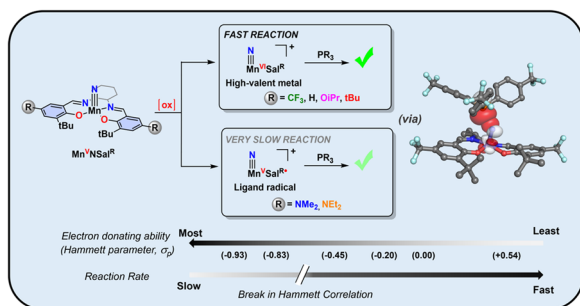
2205



Efficient construction of functionalized pyrroloindolines through cascade radical cyclization/intermolecular coupling

Yonggang Jiang, Dongxiang Liu, Lening Zhang, Cuirong Qin, Hui Li, Haitao Yang, Patrick J. Walsh* and Xiaodong Yang*

2211



Untangling ancillary ligand donation *versus* locus of oxidation effects on metal nitride reactivity

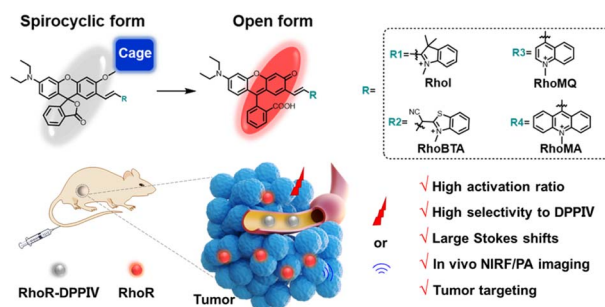
Samyadeb Mahato, Warren VandeVen, Gregory A. MacNeil, Jason M. Pulfer and Tim Storr*



2221

Xanthene-based near-infrared chromophores for high-contrast fluorescence and photoacoustic imaging of dipeptidyl peptidase 4

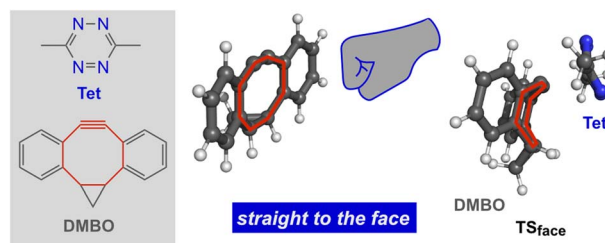
Pei Lu, Si-Min Dai, Huihui Zhou, Fenglin Wang,*
Wan-Rong Dong* and Jian-Hui Jiang



2229

How cycloalkane fusion enhances the cycloaddition reactivity of dibenzocyclooctynes

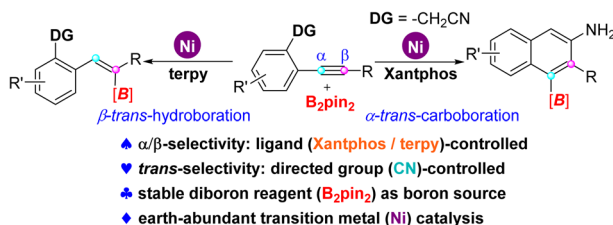
Dennis Svatoněk,* Anton Murnauer, Zhuoting Tan,
K. N. Houk and Kathrin Lang*



2236

Ligand-controlled regiodivergent Ni-catalyzed *trans*-hydroboration/carboboration of internal alkynes with B_2pin_2

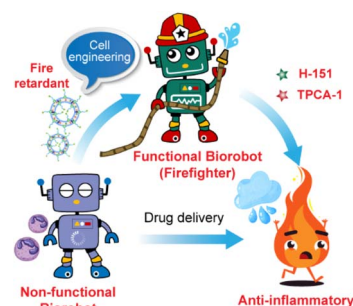
Zunsheng Chen, Biao Nie, Xiaoning Li, Teng Liu,
Chunsheng Li and Jiuzhong Huang*



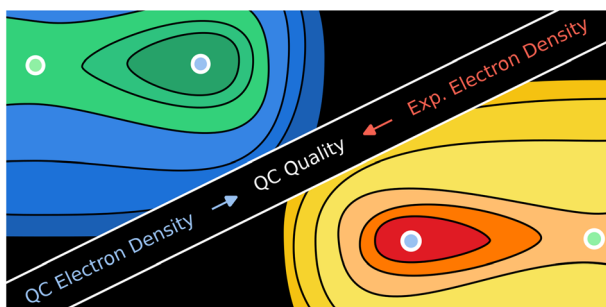
2243

A living neutrophil Biorobot synergistically blocks multifaceted inflammatory pathways in macrophages to effectively neutralize cytokine storm

Ya Gao, Anwei Zhou, Kerong Chen, Xinyuan Zhou,
Yurui Xu,* Shuangshuang Wu* and Xinghai Ning*



2257



The electron density: a fidelity witness for quantum computation

Mårten Skogh, Werner Dobrautz, Phalgun Lolur, Christopher Warren, Janka Biznárová, Amr Osman, Giovanna Tancredi, Jonas Bylander and Martin Rahm*

