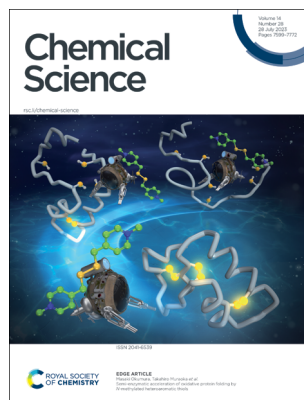


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ISSN 2041-6539 CODEN CSHCBM 14(28) 7599–7772 (2023)



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See Takao Yamaguchi, Satoshi Obika *et al.*, pp. 7620–7629.  
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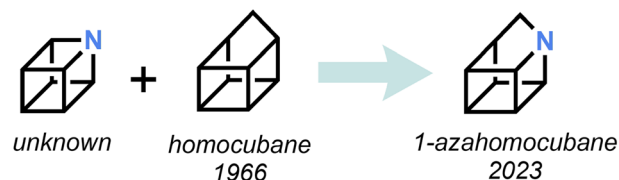
**Inside cover**  
See Masaki Okumura, Takahiro Muraoka *et al.*, pp. 7630–7636.  
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## COMMENTARY

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### A focus on 1-azahomocubane: the new kid on the block

Cecile Elgindy and Mark D. Levin\*

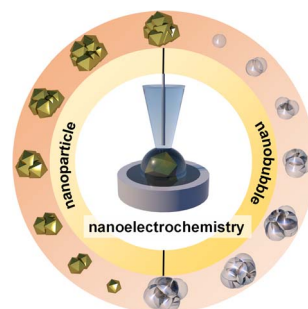


## PERSPECTIVE

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### Nanoelectrochemistry in electrochemical phase transition reactions

Elías Mondaca-Medina, Roberto García-Carrillo, Hyein Lee, Yufei Wang, He Zhang and Hang Ren\*



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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.

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## Development of 8–17 XNAzymes that are functional in cells

**DNAzyme-Mediated Cleavage**

Cells

Endogenous RNA

N-G

N G

A G C T G C G C A G

Mg<sup>2+</sup>

**Designed 8–17 XNAzyme**

- ✓ Good Activity
- ✓ High Biostability

**Crystal Structure-Based**

Base

OMe

**ASO-Based**

Base

PO<sub>3</sub><sup>2-</sup>

# Semi-enzymatic acceleration of oxidative protein folding by *N*-methylated heteroaromatic thiols

Reduced & Denatured Protein

$\text{Me-N}^+\text{pyridine-CH}_2\text{-S-S-CH}_2\text{-pyridine-N}^+\text{(Me)-Cl}^-$   
**pMePySS**

**Folding Promotion by Stoichiometric Loading**

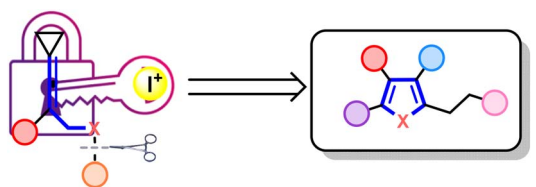
Native Protein

## Site-selective carbonylation of arenes *via* C(sp<sup>2</sup>)-H thianthrenation: direct access to 1,2-diarylethanones

- ✔ Site-selective C-H carbonylation
- ✔ Good functional group tolerance
- ✔ Low-cost palladium catalyst
- ✔ Excellent yield, up to 99%
- ✔ Mild conditions

### Real-time cell metabolism assessed repeatedly on the same cells *via* para-hydrogen induced polarization

7648



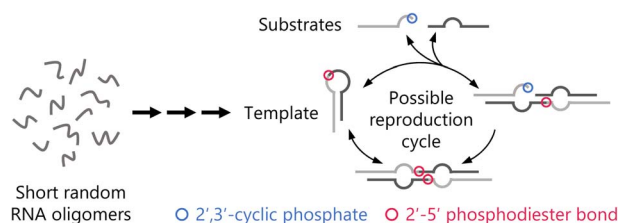
$X = N, O, S$   $\bullet$  short time  $\bullet$  wide substrate range  
 $X = SO_2R, H$   $\bullet$  mild conditions  $\bullet$  metal free

54 examples, up to 95% yield

### Construction of pyrroles, furans and thiophenes via intramolecular cascade desulfonylative/dehydrogenative cyclization of vinylidenecyclopropanes induced by NXS ( $X = I$ or $Br$ )

Zhe Meng, Jun Yan, Chao Ning, Min Shi\* and Yin Wei\*

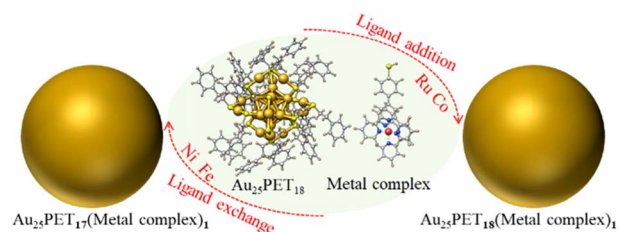
7656



### Minimal RNA self-reproduction discovered from a random pool of oligomers

Ryo Mizuuchi\* and Norikazu Ichihashi

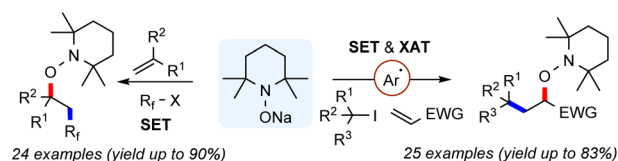
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### Engineering ligand chemistry on $Au_{25}$ nanoclusters: from unique ligand addition to precisely controllable ligand exchange

Jiangtao Zhao, Abolfazl Ziarati\*, Arnulf Rosspeintner, Yanan Wang and Thomas Bürgi\*

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### 1,2-Aminoxyalkylation of alkenes with alkyl iodides and TEMPONa through SET- and XAT-processes

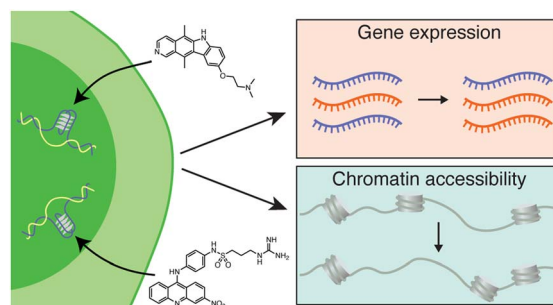
Anirban Maity and Armido Studer\*



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### G4-DNA formation and chromatin remodelling are interdependent in human cells

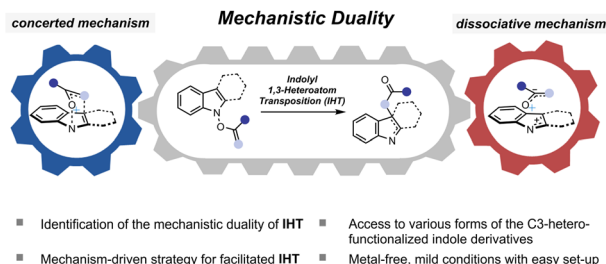
Nicholas B. Lawler, Arnold Ou, Jessica J. King, Cameron W. Evans,\* K. Swaminathan Iyer\* and Nicole M. Smith\*



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### Mechanistic duality of indolyl 1,3-heteroatom transposition

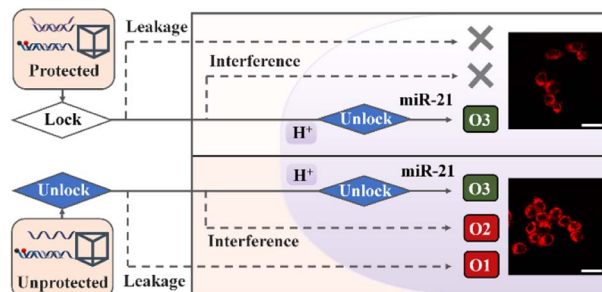
Yujin Lee, Yun Seung Nam, Soo Young Kim, Jeong Eun Ki and Hong Geun Lee\*



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### Intracellular activated logic nanomachines based on framework nucleic acids for low background detection of microRNAs in living cells

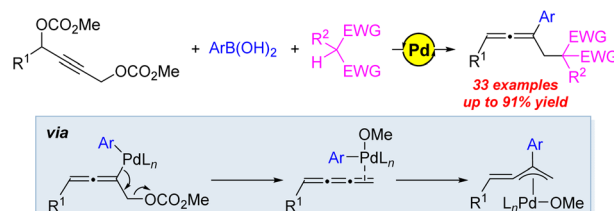
Xiao-Qiong Li, Yi-Lei Jia, Yu-Wen Zhang, Hong-Yuan Chen and Jing-Juan Xu\*



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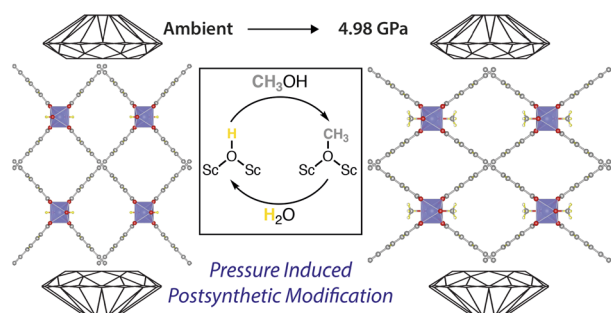
### A Pd-catalyzed highly selective three-component protocol for trisubstituted allenes

Can Li, Zhengnan Zhou and Shengming Ma\*





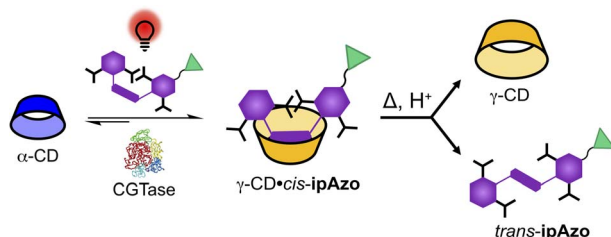
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### Pressure-induced postsynthetic cluster anion substitution in a MIL-53 topology scandium metal-organic framework

Alexander J. R. Thom, Gemma F. Turner, Zachary H. Davis, Martin R. Ward, Ignas Pakamori, Claire L. Hobday, David R. Allan, Mark R. Warren, Wai L. W. Leung, Iain D. H. Oswald, Russell E. Morris, Stephen A. Moggach,<sup>\*</sup> Sharon E. Ashbrook<sup>\*</sup> and Ross S. Forgan<sup>\*</sup>

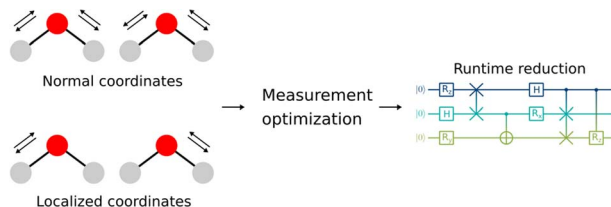
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### Light-controlled enzymatic synthesis of $\gamma$ -CD using a recyclable azobenzene template

Juliane Sørensen, Emilie Ljungberg Hansen, Dennis Larsen, Mathias Albert Elmquist, Andreas Buchleithner, Luca Florean and Sophie R. Beeren<sup>\*</sup>

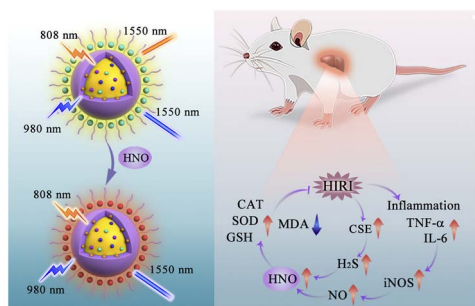
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### Optimizing the number of measurements for vibrational structure on quantum computers: coordinates and measurement schemes

Marco Majland,<sup>\*</sup> Rasmus Berg Jensen, Mads Greisen Højlund, Nikolaj Thomas Zinner and Ove Christiansen<sup>\*</sup>

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### Revealing the role of nitroxyl during hepatic ischemia-reperfusion injury with a NIR-II luminescent nanoprobe

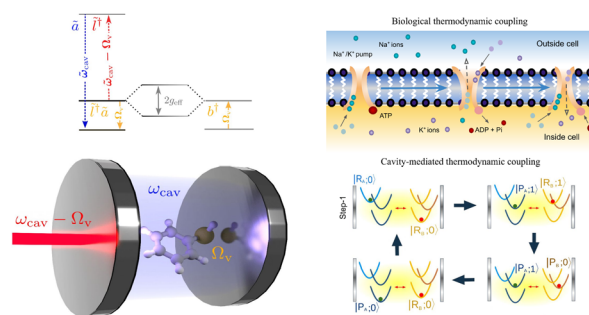
Chenchen Li, Wenqiang Bi, Tao Liang, Zhen Li<sup>\*</sup> and Zhihong Liu<sup>\*</sup>



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## A path towards single molecule vibrational strong coupling in a Fabry–Pérot microcavity

Arghadip Koner, Matthew Du, Sindhana Pannir-Sivajothi, Randall H. Goldsmith and Joel Yuen-Zhou\*



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## Metal–organic framework (MOF) hybridized gold nanoparticles as a bifunctional nanozyme for glucose sensing

Pei-Hong Tong, Jing-Jing Wang, Xi-Le Hu, Tony D. James\* and Xiao-Peng He\*

