

# ChemComm

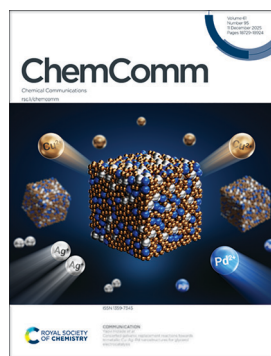
Chemical Communications

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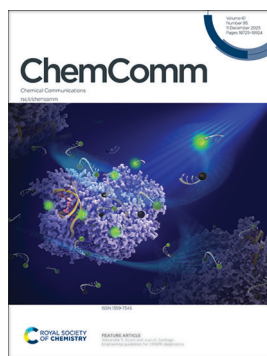
## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 61(95) 18729-18924 (2025)



### Cover

See Yaovi Holade *et al.*, pp. 18798–18801. Image reproduced by permission of Yaovi Holade from *Chem. Commun.*, 2025, 61, 18798.



### Inside cover

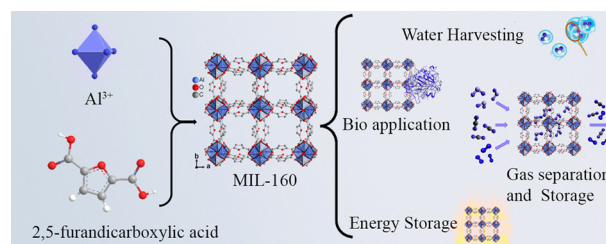
See Alexandre S. Avaro and Juan G. Santiago, pp. 18756–18772. Image reproduced by permission of Alexandre S. Avaro and Juan G. Santiago from *Chem. Commun.*, 2025, 61, 18756.

## HIGHLIGHT

18742

### The metal–organic framework MIL-160: comprehensive insights into synthesis and applications

Mahdi Karimi\* and Christoph Janiak\*

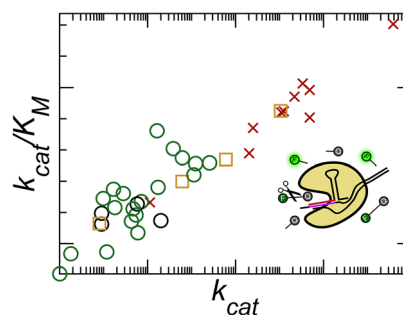


## FEATURE ARTICLES

18756

### Engineering guidelines for CRISPR diagnostics

Alexandre S. Avaro and Juan G. Santiago\*



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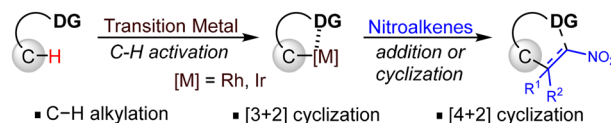
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## FEATURE ARTICLES

18773

## Nitroalkenes in directing group-assisted transition-metal-catalyzed C–H functionalization

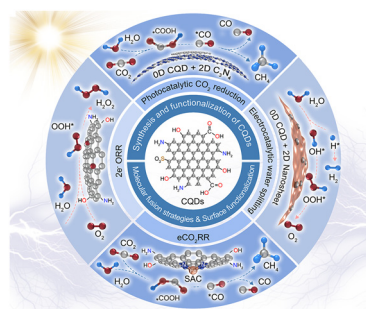
Wenjing Gao, Ruirui Song, Peng Yang\* and Shuang-Liang Liu\*



18784

## Carbon quantum dots for environmental catalysis: green synthesis, surface functionalization, and interface engineering

Yong Li, Kang Wang, Weidong Hou and Liang Wang\*

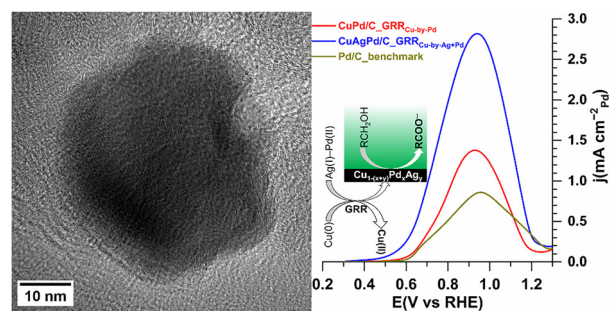


## COMMUNICATIONS

18798

## Concerted galvanic replacement reactions towards trimetallic Cu–Ag–Pd nanostructures for glycerol electrocatalysis

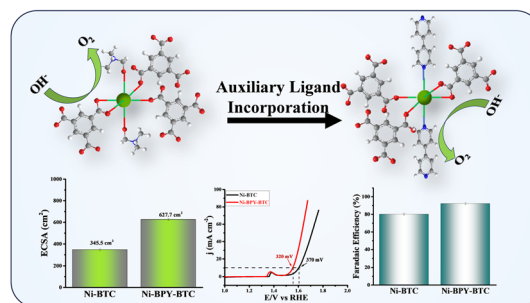
Eddy Zakharia, Zahra Hagheh Kavousi, Bonito Aristide Karamoko, Erwan Oliviero, Valerie Bonniot, Eddy Petit, Valerie Flaud, David Cornu, Mikhael Bechelany and Yaovi Holade\*



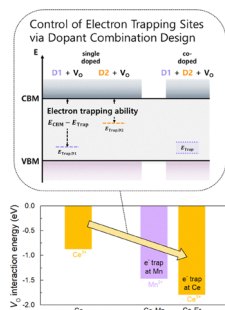
18802

## Effect of auxiliary ligand in nickel-based metal organic frameworks towards oxygen evolution electrocatalysis

Prasita Mazumder, Arun Karmakar, Ragunath Madhu, Sreenivasan Nagappan, Hariharan N. Dhandapani, Suprobhat Singha Roy, Aditi De, Asha K Satheesan and Subrata Kundu\*



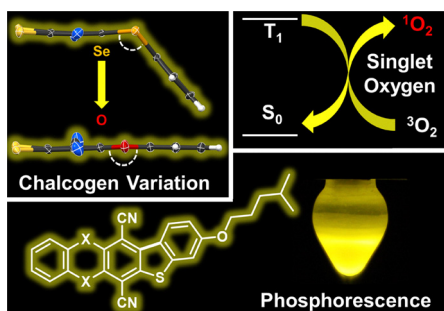
18806



## DFT-guided additive design for BaTiO<sub>3</sub>-based MLCCs exhibiting excellent insulation reliability

Gi Joo Bang,\* Hyo-Ki Hong, Seong Hun Kim, Juhun Park, Kang-Sahn Kim and Giwoong Ha\*

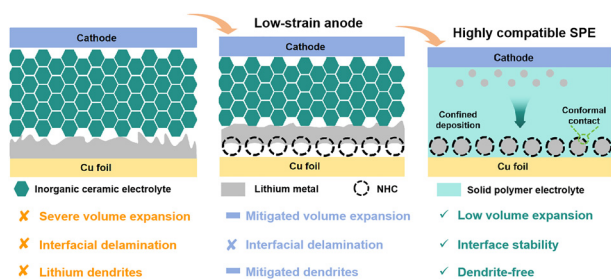
18810



## Tuneable phosphorescence and singlet oxygen production of bridged ethers via chalcogen variation and photocyclisation

Marco Schmiedtchen, Sidharth Thulaseedharan Nair Sailaja, Rick Y. Lorberg, Christoph Wölper, Anzhela Galstyan and Jens Voskuhl\*

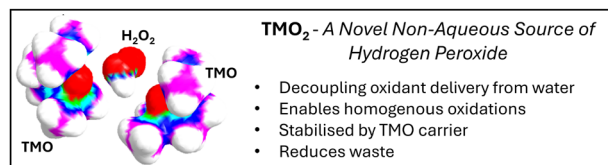
18814



## Stabilizing the anodic interface for solid-state lithium metal batteries by combining a low-strain lithium/carbon anode with a polymer electrolyte

Junquan Lai, Yuting Hu, Fan Yang, Bo Hong,\* Mengran Wang,\* Rui Tan and Jie Li

18818



## TMO<sub>2</sub> – a novel non-aqueous source of hydrogen peroxide

Fergal P. Byrne, James H. Clark,\* James Comerford,\* Preshendren Govender and Francesca Miglioli

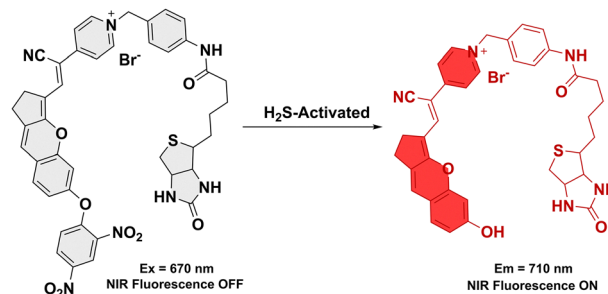


## COMMUNICATIONS

18822

### Mitochondria-targeting near-infrared fluorescent probe for selective detection and imaging of endogenous/exogenous H<sub>2</sub>S in breast cancer models

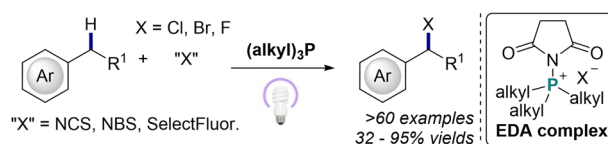
Junning Chen, Tianle Liu, Yuhan Chen, Meiqin Luo, Huilong Zhu, Zhou Xu,\* Yanhua Liu\* and Nan Wu\*



18826

### Metal- and photocatalyst-free benzylic C–H halogenation *via* an electron donor–acceptor complex

Dejian Cao, Kaiting Sun, Chunjie Qian, Mengqi Fang, Fan Luo\* and Shihui Liu\*

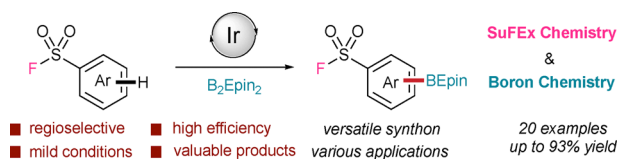


- metal- and photocatalyst-free
- high site- and regio-selectivity
- late-stage introduction of halogen into biologically active compounds
- readily available halogenated reagents
- operational simplicity, mild condition

18830

### Regioselective postmodification of aryl sulfonyl fluorides *via* iridium(I)-catalysed C–H borylation

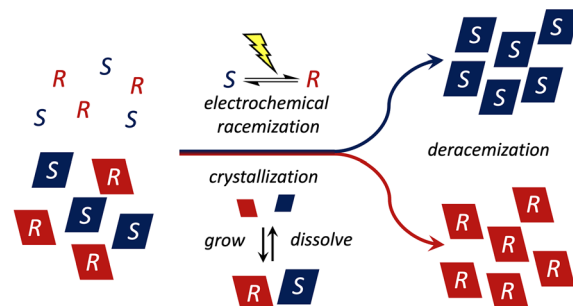
Shuting Wang, Shuai Tang, Xiao-Le Han\* and Hua Zhang\*



18834

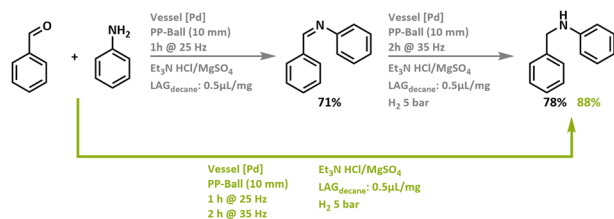
### Deracemization by coupling electrochemically assisted racemization and asymmetric crystallization

Anne-Sophie Léonard, Morgan Regnier, Susanna Bertuletti, Sjoerd W. van Dongen, Roberta Listro, Michel Leeman, Richard M. Kellogg, Timothy Noël and Willem L. Noorduin\*



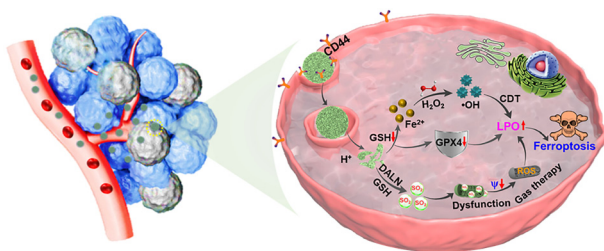
## COMMUNICATIONS

18838

**Ligand-free reductive amination *via* Pd-coated mechanocatalysis**

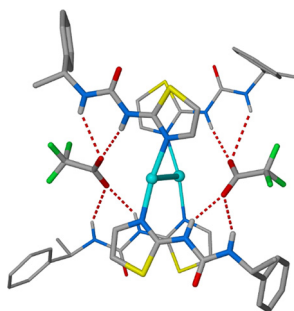
Maximilian Wohlgemuth,\* Sarah Schmidt, Lars Beißel and Lars Borchardt\*

18842

**A GSH-consuming nanoamplifier for synergistic SO<sub>2</sub> gas therapy and ferroptosis promotion**

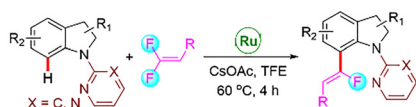
Fengqin Wang, Yan Miao, Jiawen Yang, Jian An, Yawen Xu, Yuxing Huang, Gehua Huang, Suxuan Ge, Yinfang Jiang, Yan Xue,\* Yan Cai, Jin Wang, Tingting Chen, Yong Yao\* and Yang Wang\*

18846

**Dependence of an anion template on amino acid binding in DMSO/H<sub>2</sub>O by a chiral Ag/urea-based tweezer**

Diksha U. Sawant, Peter Halat, Alasdair I. McKay, Ekaterina I. Izgorodina and David R. Turner\*

18850



- Excellent configuration exclusivity
- Moderate to excellent yield
- Mild and convenient
- Good functional group compatibility
- Detachable directing group

**Ru(II)-catalyzed stereoselective C(7)-H  $\alpha$ -fluoroalkenylation of indolines**

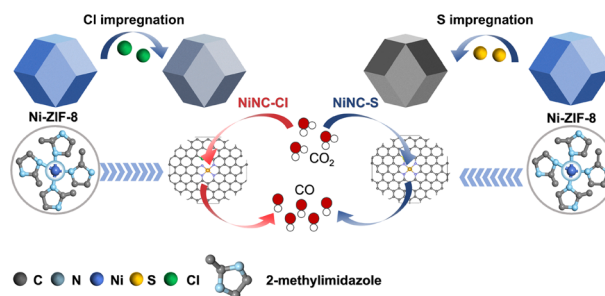
Xingwang Liu, Shunli Xiao, Hao Huang, Lele Bai, Wenze Lai and Gaorong Wu\*



18854

### Long-range coordination engineering in nickel single-atom catalysts to boost the electroreduction of CO<sub>2</sub>

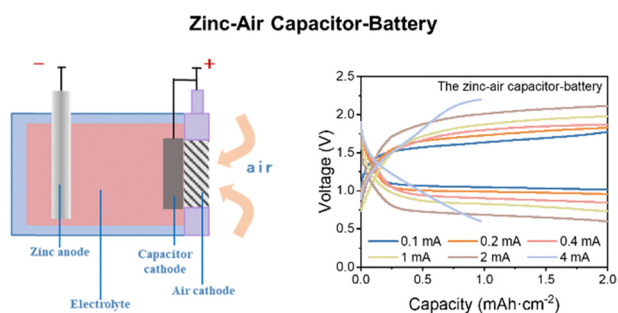
Mingxia Peng, Jing Li, Sili Zhu, Fengrui Li, Mengde Kang, Honglai Liu, Cheng Lian and Jingkun Li\*



18858

### A neutral zinc–air capacitor-battery: a hybrid energy storage system achieving high energy and power performance

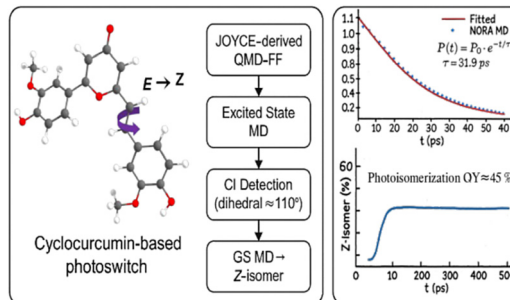
Jingke Yang, Pengwei Jing, Chuyi Zhong, Jiewen Yang, Mingliang Jin\* and Qingyun Dou\*



18862

### NORA: non-adiabatic dynamics with force-field based representation. Application to photoisomerization in biomimetic photoswitches

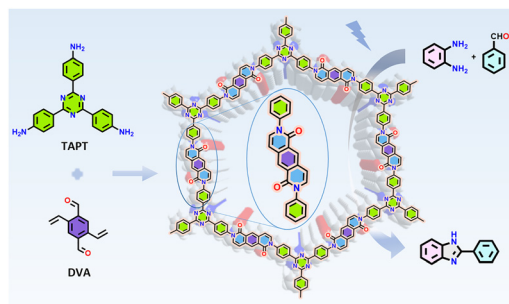
Raúl Losantos,\* Giacomo Prampolini and Antonio Monari\*



18866

### Tandem reaction to access isoquinolone-linked covalent organic frameworks for photocatalytic synthesis of benzimidazoles

Cheng-Juan Wu,\* Ting-Rui Li, Li-Jing Niu, Hao-Jia Wang, Ke-Jiao Yao, Wen-Jing Liang, Jing-Lan Kan, Yan Geng\* and Yu-Bin Dong



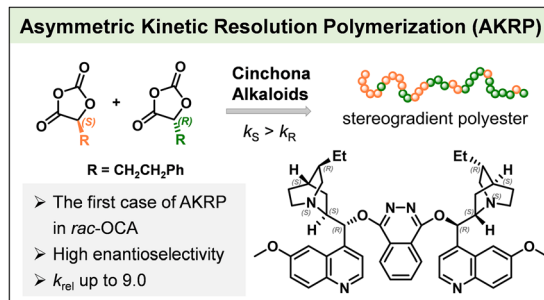


## COMMUNICATIONS

18886

### Asymmetric kinetic resolution polymerization of racemic *O*-carboxyanhydride catalyzed by cinchona alkaloids

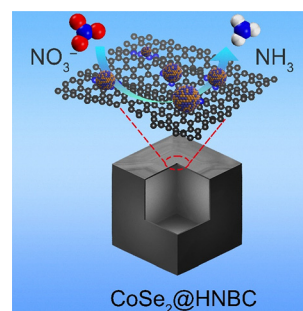
Yanju Jia, Rulin Yang,\* Hongguang Sun,\* Xuanhua Guo, Guangqiang Xu\* and Qinggang Wang\*



18890

### CoSe<sub>2</sub> hollow nanoboxes for enhanced electrocatalytic nitrate reduction toward ammonia synthesis

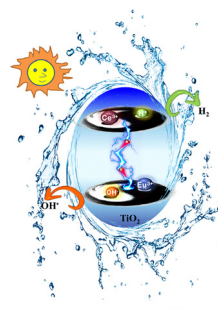
Lingchang Wang, Zhiwei Wang, Mingying Chen, Yingying Huang,\* Imran Shakir, Longchao Zhuo, Xuping Sun, Yongji Qin\* and Xijun Liu\*



18894

### Dual rare earth atomic sites with a conjugated electronic structure for efficient photocatalytic water splitting

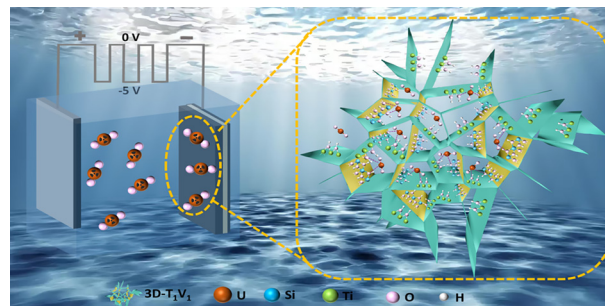
Yanfei Fan, Ying Liang, Kang Chen, Qingqing Li, Dongxu Pan, Shiqiu Zhang, Guanwei Cui\* and Bo Tang



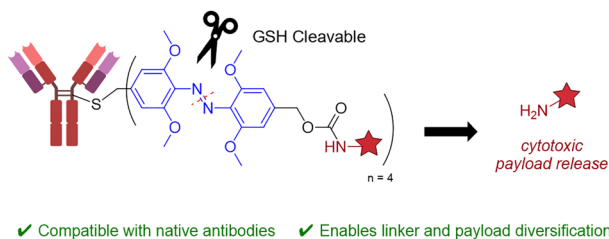
18898

### Electro-trapping uranium with a cost-effective and scalable ice-templated MXene/VMT electrode

Huojiao Chen, Yujie Shao, Yan Liu,\* Zhirong Liu, Changfu Wang, Wanglong Liu, Fengtao Yu, Yun Wang, Dingzhong Yuan and Hao Jiang\*



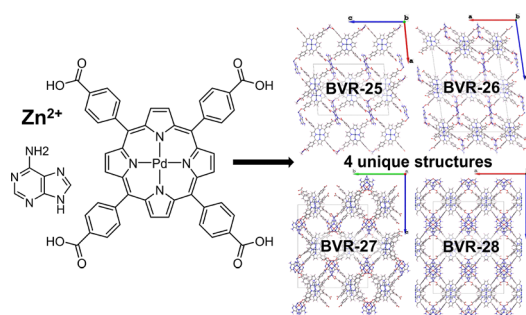
18902



### Towards a glutathione-cleavable azobenzene linker for antibody–drug conjugates

Mia Kapun, Roshan Patel, Mahri Park, F. Javier Pérez-Areales, Kristina A. Kostadinova, Thomas Wharton, Jason S. Carroll and David R. Spring\*

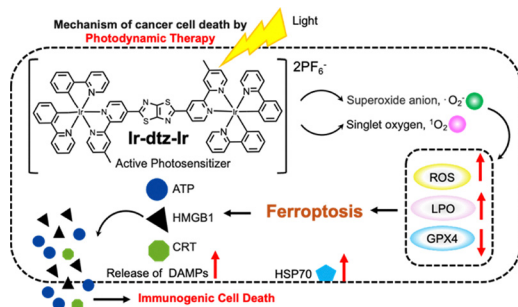
18906



### Stacked, twisted, and porous: structural diversity in photoactive porphyrin-based metal–organic frameworks

Mitchell S. Kenny, Andrzej Gładysiak, Jacob M. Lessard, Dylan Pyle and Kyriakos C. Stylianou\*

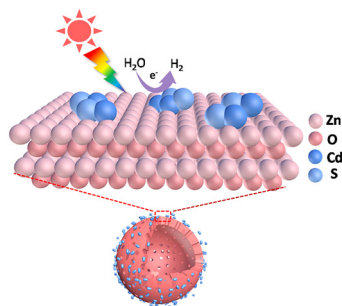
18910



### A thiazolo[5,4-d]thiazole-bridged dinuclear iridium(III) photosensitizer induces ferroptosis for boosting photoimmunotherapy against hypoxic melanoma

Hui Jiang, Qiaoshan Lie, Fa Wang, Jiahao Zeng, Jinrong Yang, Jinzhe Liang\* and Hui Chao\*

18914



### Combining a hollow spherical structure and heterojunction promotes sustainable ZnO/CdS photocatalytic hydrogen production

Yong Xie, Sai Zhang, Xiang Liu,\* Teng Wang, Haozhe Huang, Juanrong Chen and Shunsheng Cao\*

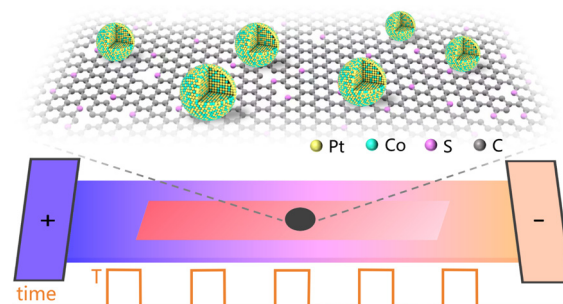


## COMMUNICATIONS

18918

**The sulfur-anchored Joule heating synthesis of ultrasmall nanoalloys to enhance oxygen electroreduction**

Shuai Wei, Xiao-Yan Huang, Yi Zhang, Yao-Lin A, Jie Wei, Yan Liu,\* Hua Zhang\* and Jian-Feng Li\*



## CORRECTION

18922

**Correction: Ambipolar macrocycle derived from spiro-xanthene and carbazole: synthesis, structure–property relationships, electronic properties and host–guest investigation**

Phani Kumar Kodali, Sairathna Choppella, Ankita, Deepak Kumar, Upendra Kumar Pandey, Mahesh Kumar Rawwa and Surya Prakash Singh\*

