

# Dalton Transactions

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## IN THIS ISSUE

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### Cover

See Fernando R. Xavier *et al.*  
pp. 5117–5129.

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### Inside cover

See Adoracion G. Quiroga *et al.* pp. 5130–5138.

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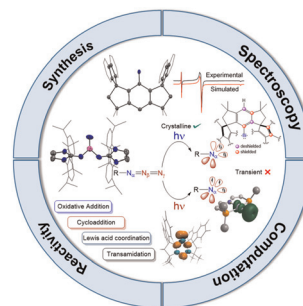
Acknowledgement:  
Cover image designed by David Fabra, MOF-808 crystal structure: Yaghi *et al.*, *J. Am. Chem. Soc.*, 2014, **136**, 11, 4369–4381.

## PERSPECTIVE

5090

### Monocoordinated nitrenes and heavier pnictinidenes: transient to bottleable compounds

Sandeep Kumar, Kanishk Tomer, Avnish Singh and Priyabrata Ghana\*

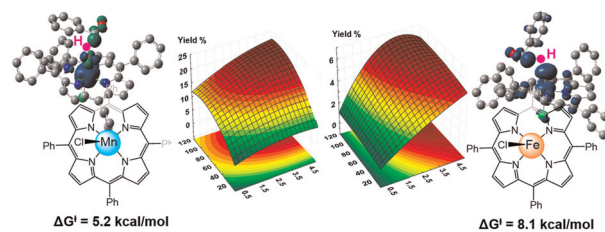


## PAPERS

5117

### A comprehensive experimental, multivariate statistical, and DFT computational analysis of the catalytic oxidation of benzyl alcohols mediated by Mn(III) and Fe(III) metalloporphyrins

Larissa Chimilouski, Sheetal Ranaut, William Henrique Slominski, Patrícia Salvador Tessaro, Gilson DeFreitas-Silva, Edmar Martendal, Cláudio N. Verani, Shivnath Mazumder\* and Fernando Roberto Xavier\*



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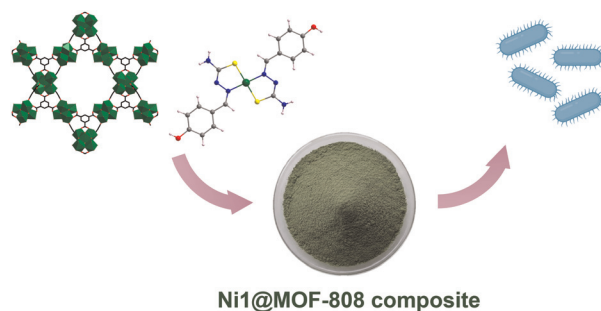
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Fundamental questions  
Elemental answers

5130

### Structural features and antibacterial activity of Ni(II) thiosemicarbazones in a zirconium metal-organic framework composite

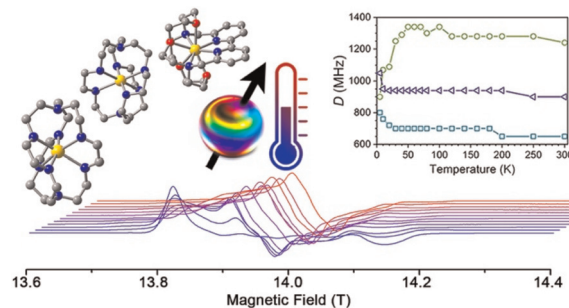
Edward Loukopoulos, David Fabra, Jorge Melones-Herrero, Ana I. Matesanz, Carmen Viciano, Ana E. Platero-Prats,\* Isabel Sánchez-Pérez\* and Adoracion G. Quiroga\*



5139

### Amplified electron–spin thermal sensitivity in Mn(II) complexes

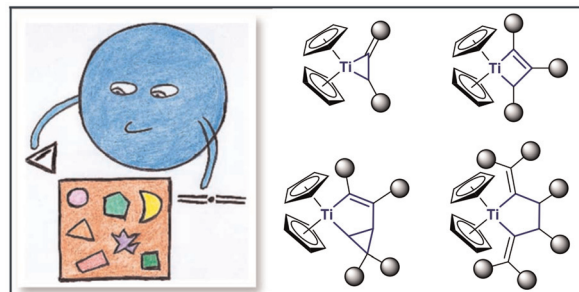
Anthony J. Campanella, Amanda Gin, Siyoung Sung, Cassidy E. Jackson, Roxanna Martinez, Ökten Üngör, Srikanth Dasari, Andrew Ozarowski, Indrani Bhowmick and Joseph M. Zadrozny\*



5151

### Expanding the reactivity of Rosenthal's reagent to cyclopropenes and allenes

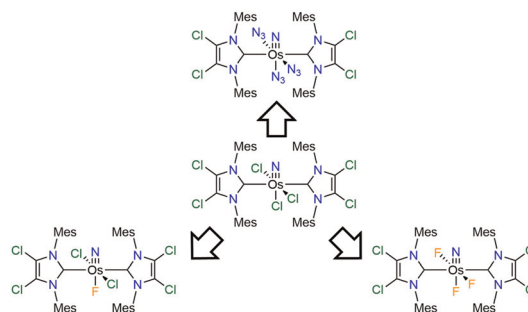
Marcel Eilers, Dennis Geik, Marc Schmidtman, Sven Doye and Rüdiger Beckhaus\*



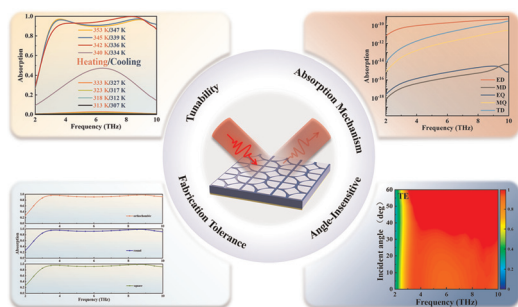
5161

### Accessing osmium(VI) nitrido complexes with N-heterocyclic carbene ligands

Joshua Parche, Robin Sievers, Tim-Niclas Streit and Moritz Malischewski\*



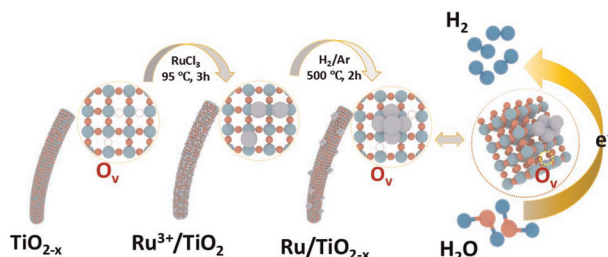
5168



### An ultra-broadband and thermally tunable terahertz metamaterial absorber with high fabrication tolerance

Hao Shi, Chunlan Wang,\* Tao Liu, Lichao Yang, Zekun Liu, Xiaoming Mo\* and Yougen Yi\*

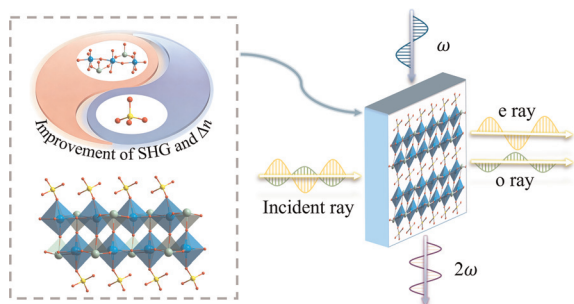
5180



### Oxygen vacancies as electronic bridges to reinforce Ru–TiO<sub>2</sub> metal–support interactions toward efficient electrocatalytic acidic hydrogen evolution

Wanjing Lai, Xiao Yang, Hailin Jiang, Xuan Luo, Jianwei Chen, Shuwen Zhao, Yanan Sun, Linjie Zhang,\* Lei Yang\* and Lili Han\*

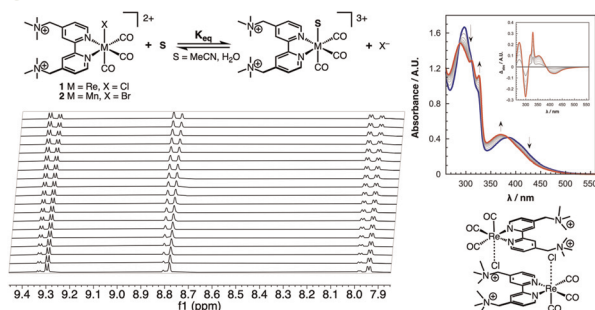
5189



### Double second-order Jahn–Teller strategy driven NLO response in sulfate crystal Nb<sub>2</sub>O<sub>2</sub>(TeO<sub>3</sub>)<sub>2</sub>(SO<sub>4</sub>) with a large birefringence

Jingsha Xu, Xiaofeng Zhang, Shanshan Chen, Weiyi Wang, Wenbo Qiu, Weizhao Cai\* and Liujiang Zhou\*

5197



### Pendant-cation assisted spontaneous axial halide substitution in group 7 M(L)(CO)<sub>3</sub>X complexes

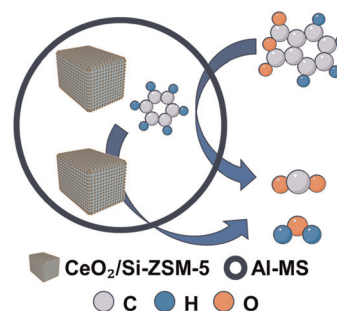
Wesley W. Kramer,\* Thomas R. Sheridan, Jorge Pérez-Vázquez, Christophe A. Boivin, Amanda M. Browne, Catherine G. Logan and Brian C. Sanders



5210

### Cracking–oxidation of dibutyl phthalate: core–shell catalyst, decarboxylation mechanism, and process cost

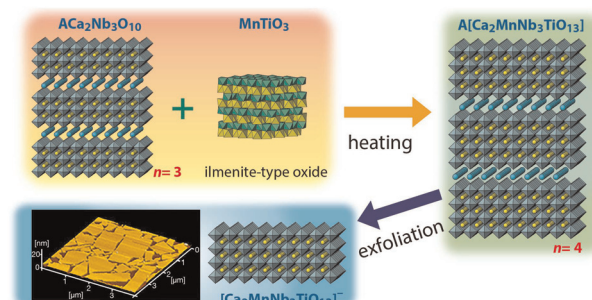
Guoqing Zhang, Tao Wei, Shangpu Zhuang, Jihai Tang, Mifen Cui, Xu Qiao and Zhuxiu Zhang\*



5217

### Synthesis of Mn-bearing layered perovskite-type niobate and its delaminated nanosheet

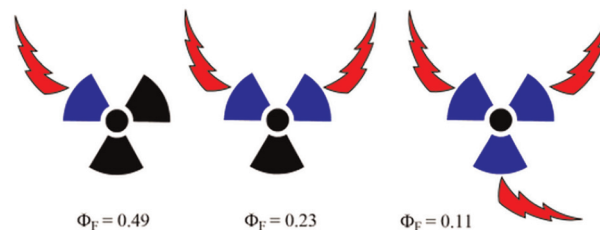
Yasuo Ebina,\* Yuichi Michiue, Nobuyuki Sakai and Takayoshi Sasaki



5224

### A systematic series of BODIPY–cyclotriphosphazene conjugates: exploring the effect of BODIPY numbers on photophysical properties

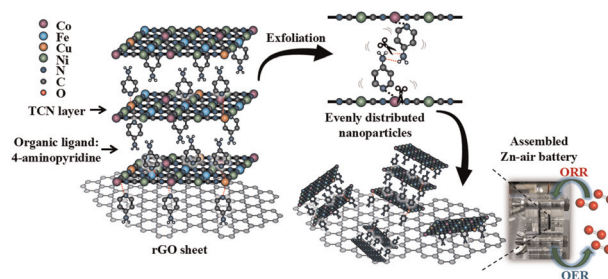
Yacinthe Mariole Mache, Semiha Yıldırım Sarıkaya\* and Husniye Ardic Alidagi



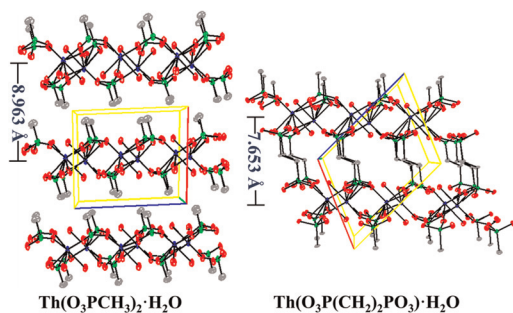
5233

### Modulation of the electrocatalytic performance of rGO/CoCuFe[Ni(CN)<sub>4</sub>] pillared with pyridine derivatives in zinc–air batteries

E. Arturo Quintanilla-Serrano,\* Próspero Acevedo-Peña,\* Marlene González and Edilso Reguera\*



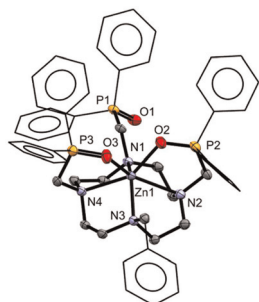
5250



### Syntheses and characterization of non-molecular phenyl- and methyl-phosphonates and ethylenediphosphonates of thorium and cerium

Rupansha Mehra and Kanamaluru Vidyasagar\*

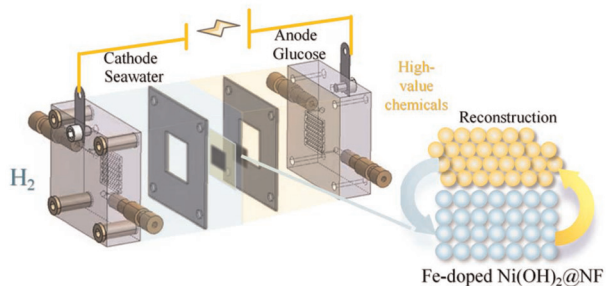
5266



### Transition metal complexes with phosphine oxide appended aza-macrocycles – effects of ring size and denticity

Julie M. Herniman, George P. Keeling, Rhys P. King,\*  
Mark E. Light, Navya Kandathil Sintho, Kate Snowsill and Gillian Reid\*

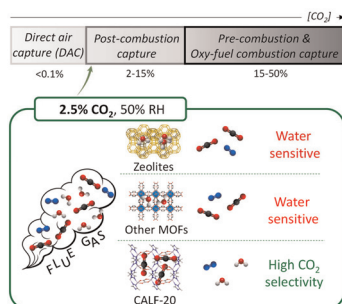
5276



### *In situ* reconstruction-regulated Fe-doped $\text{Ni}(\text{OH})_2$ for glucose oxidation electrocatalytic-enhanced seawater electrolysis

Yan Sun, Yifei Su, Zhibin Liang, Yuexia Li, Hairui Guo and Xin Jiao\*

5283



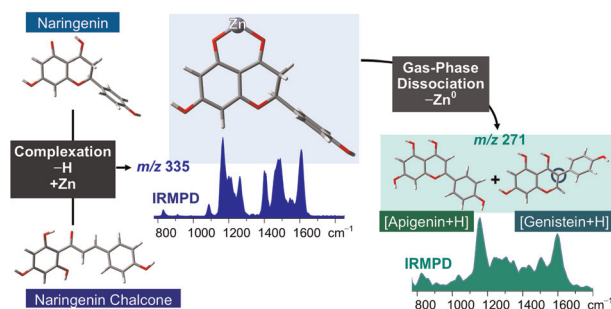
### Scalable metal–organic frameworks for efficient low concentration $\text{CO}_2$ capture under humid flue gas conditions

Thibaud Aumond, Mickaele Bonneau,\*  
Corentin Collomb, Cécile Daniel and David Farrusseng

5290

### Zn(II) complexation promotes isomerization and oxidative rearrangements of naringenin: evidence from IR ion spectroscopy and DFT calculations

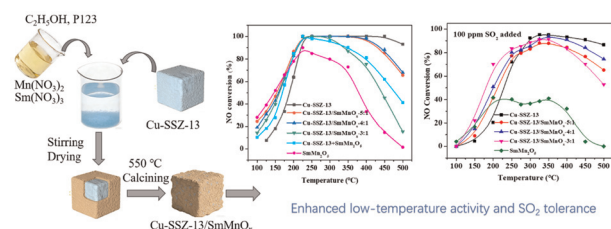
Lucretia Rotari, Valeria Vergine, Giel Berden, Jos Oomens, Barbara Chiavarino,\* Davide Corinti\* and Maria Elisa Crestoni



5301

### Enhanced low-temperature NH<sub>3</sub>-SCR activity and SO<sub>2</sub> tolerance by Cu-SSZ-13/R(Sm, Pr, Y or La) MnO<sub>x</sub> coupled catalysts

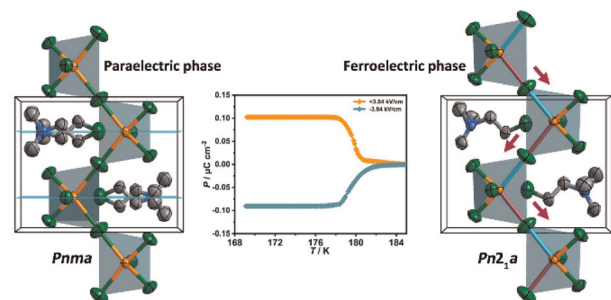
Wenting Lv,\* Xuliang Jiang, Guangmei Wei, Ruochen Wei, Fengmin Sun, Ruihua Zhang, Yanlu Guo, Xiaojuan Chai, Weiyong Jiao\* and Baoliang Lv\*



5313

### A one-dimensional hybrid ferroelectric exhibiting lone pair stereoactivity based on square pyramids

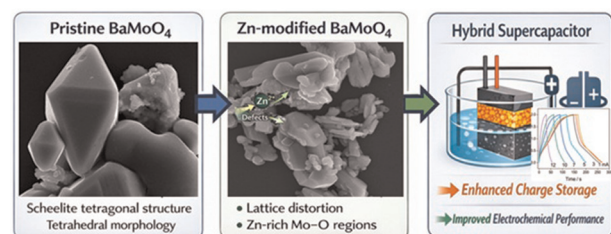
Ya-Juan Li, Yu-Qiao Tong, Shi-Qing Yin, Qian-Jun Gu, Peng-Peng Gong, Yi Guo, Bo Huang\* and Ai-Xin Zhu\*



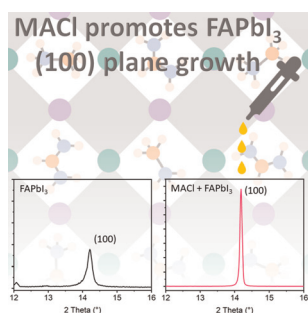
5319

### Structural evolution of BaMoO<sub>4</sub> upon Zn doping and its influence on electrochemical behavior in hybrid supercapacitors

Galey Dorji, Manickam Minakshi,\* Sabina Shahi, Rob Aughterson, Katsuhiko Ariga and Lok Kumar Shrestha\*



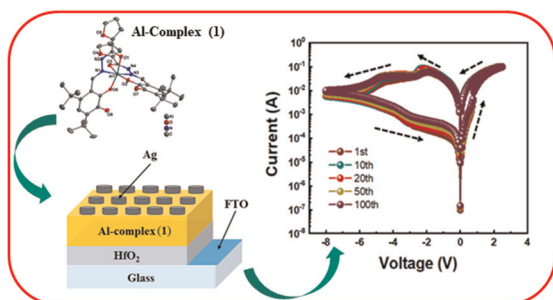
5336



### Experimental and theoretical insights into the incorporation of MACl in FAPbI<sub>3</sub> perovskite films

Nazlıcan Şahin Sütçü,\* Pelin Kavak, Ayşenur Corcor Özbay, İrem Topal, Neşe Güngör, Emrah Çakmakçı, Kadir Eşmer, Caner Değer, İlhan Yavuz and Mustafa Alevli\*

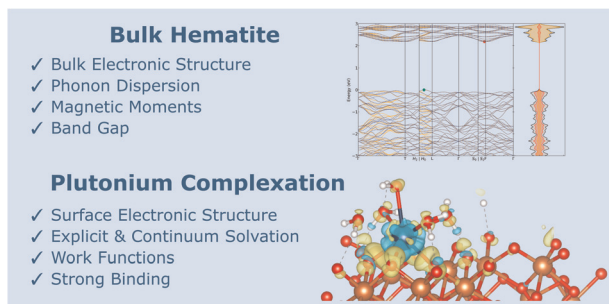
5345



### Solution-processable homoleptic aluminum(III) catecholaldimine complex as an active material for RRAM switching device

Vivek Sharma, Anupam Chetia, Rishabh Raj Upadhyay, Purva Dua, Satyajit Sahu\* and Ramesh K. Metre\*

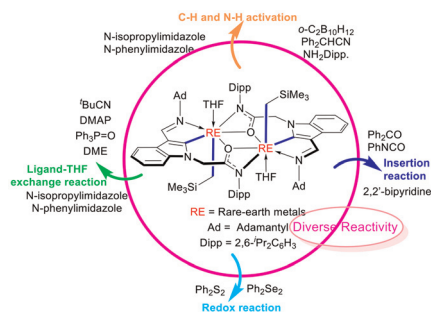
5359



### The interaction of Pu(IV) with the hematite (001) terminations: a periodic boundary condition DFT study

Ryan L. Dempsey and Nikolas Kaltsoyannis\*

5369



### Reactivity of homodinuclear rare-earth metal complexes with an indol-2-yl-based pincer ligand toward nitrogen- and oxygen-containing compounds

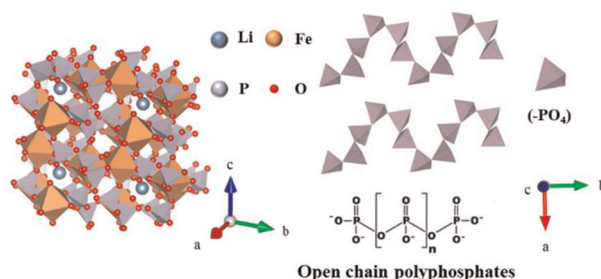
Jianwu Wen, Fuxiang Chai, Yonghu Bao, Mengxin Tao, Zeming Huang, Xiancui Zhu,\* Qingbing Yuan and Shaowu Wang\*



5382

### Uncovering lithium iron metaphosphate as a cathode material through organophosphate-assisted one-pot synthesis

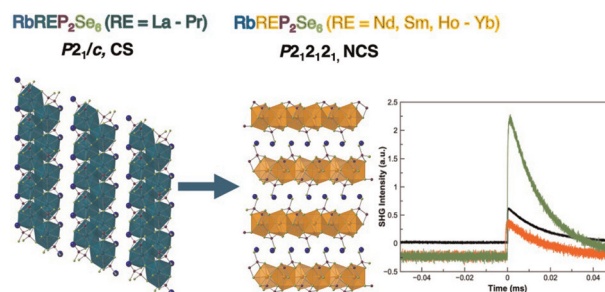
Yongda Guo, Jingbo Huang, Junzhen Wei, Yating Hu,\*  
Shaomin Huang\* and Ximeng Liu\*



5388

### Centrosymmetric to noncentrosymmetric structure transition of the RbREP<sub>2</sub>Se<sub>6</sub> (RE = La–Nd, Sm, Ho–Yb) series: crystal growth, magnetic and optical properties

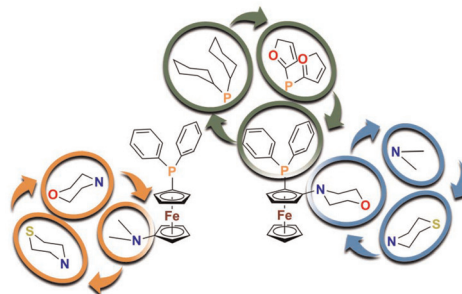
Habiba Binte Kashem, Md Abdullah Al Muhit,  
Hope Eden Smith, Eric A. Gabilondo,  
P. Shiv Halasyamani and Hans-Conrad zur Loye\*



5397

### Synthesis of hybrid phosphinoferrocene ligands bearing amine pendants and catalytic evaluation of their gold(i) complexes

David Rezazgui, Ivana Císařová, Petr Štěpnička and  
Jiří Schulz\*



5408

### Cubane lanthanoid complexes with tridentate [O, P=O, O] coordination using tris(5-*tert*-butyl-2-hydroxyphenyl)-phosphine oxide ligands: synthesis, characterisation, and magnetic behaviour

Patrick Mangundu, Curtis C. Ho, Richard A. Mole,  
Marcus Korb\* and Rebecca O. Fuller\*

