

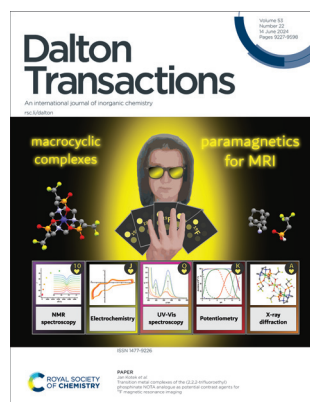
Dalton Transactions

An international journal of inorganic chemistry incorporating Acta Chemica Scandinavica
rsc.li/dalton

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 1477-9226 CODEN DTARAF 53(22) 9227-9598 (2024)



Cover

See Jan Kotek et al.,
pp. 9267–9285.

Image reproduced by
permission of Filip Koucký
and Jan Kotek from *Dalton
Trans.*, 2024, **53**, 9267.



Inside cover

See Jianjian Dai and
Shengyu Dai, pp. 9286–9293.

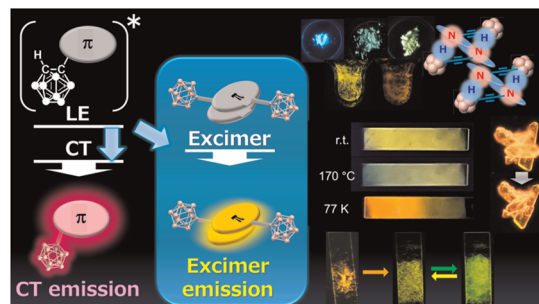
Image reproduced by
permission of Shengyu Dai
from *Dalton Trans.*, 2024, **53**,
9286.

FRONTIER

9240

Solid-state excimer emission of *o*-carborane derivatives and applications for stimuli-responsive luminescent materials

Kazuo Tanaka

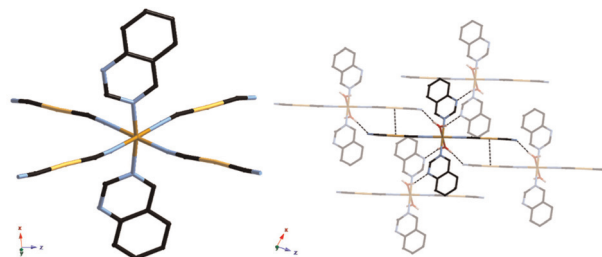


COMMUNICATIONS

9248

Soma–Iwamoto-type SCO complex $\text{Fe}(\text{quinazoline})_2[\text{Au}(\text{CN})_2]_2$ using the quinazoline-type ligand

Kosuke Kitase,* Daisuke Akahoshi and
Takafumi Kitazawa



Royal Society of Chemistry approved training courses

Explore your options.
Develop your skills.
Discover learning
that suits you.

**Courses in the classroom,
the lab, or online**

Find something for every
stage of your professional
development. Search our
database by:

- subject area
- location
- event type
- skill level

Members **get at least 10% off**

Visit rsc.li/cpd-training

**SAVE
10%**

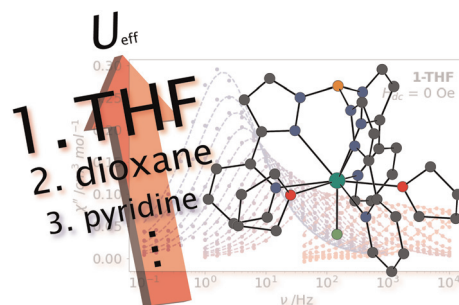


COMMUNICATIONS

9252

Approaching the 1000 K energy barrier in high coordinate lanthanide single-ion magnets: Increasing U_{eff} in the $[\text{Dy}(\text{Tp}^{2-\text{py}})\text{F}]^+$ moiety with tetrahydrofuran

Jarrod R. Thomas, Marcus J. Giansiracusa* and Scott A. Sulway*

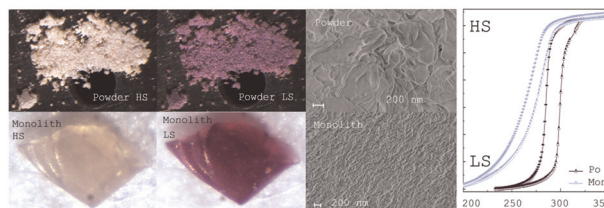


9257

Spin crossover $\{[\text{Fe}(\text{atrz})_3](\text{OTs})_2\}_n$ monolith: a green synthesis approach for Robust switchable materials

Ana Martinez-Martinez, Pablo Albacete, Mar García-Hernández, Esther Resines-Urien,* David Fairen-Jimenez* and José Sánchez Costa*

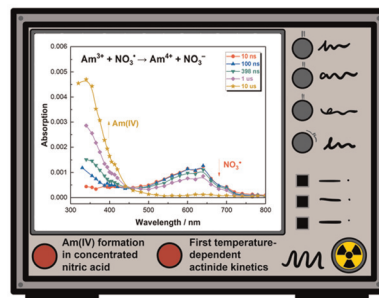
Spin Crossover $\{[\text{Fe}(\text{atrz})_3](\text{OTs})_2\}_n$ Powder vs Monolith



9262

Generation and study of Am(IV) by temperature-controlled electron pulse radiolysis

Amy E. Kynman,* Travis S. Grimes, Stephen P. Mezyk, Bobby Layne, Andrew R. Cook, Brian M. Rotermund and Gregory P. Horne*

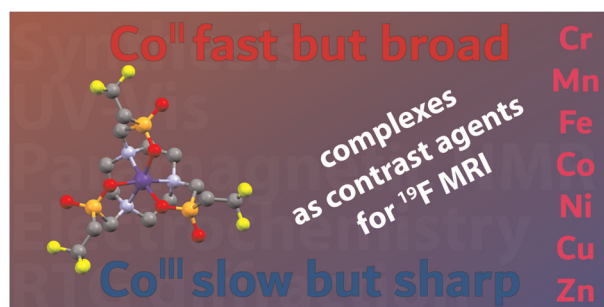


PAPERS

9267

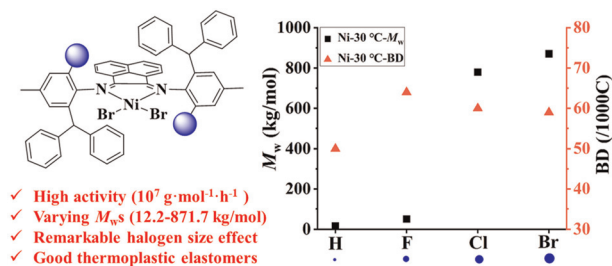
Transition metal complexes of the (2,2,2-trifluoroethyl)phosphinate NOTA analogue as potential contrast agents for ^{19}F magnetic resonance imaging

Filip Koucký, Tereza Dobrovolná, Jan Kotek,* Ivana Čísařová, Jana Havlíčková, Alan Liška, Vojtěch Kubíček and Petr Hermann



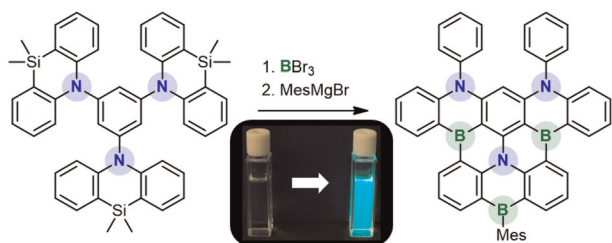
PAPERS

9286

Impact of *o*-aryl halogen effects on ethylene polymerization: steric vs. electronic effects

Jianjian Dai and Shengyu Dai*

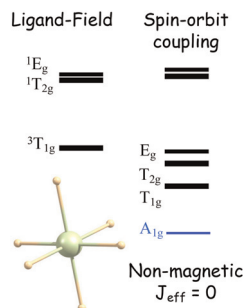
9294



Borylation and rearrangement reactions of azasilanthracenes to afford B,N-doped nanographenes

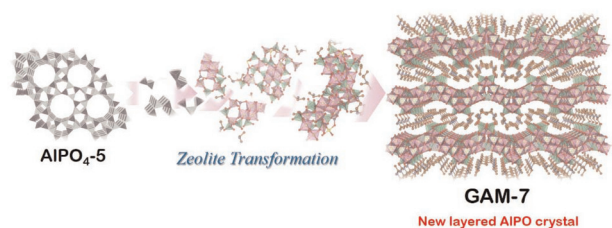
Elena Zender, Danillo Valverde, Robert Neubaur, Sebastian Karger, Alexander Virovets, Michael Bolte, Hans-Wolfram Lerner, Yoann Olivier* and Matthias Wagner*

9301

Revisiting the role of octahedral symmetry in the interpretation of spectroscopic properties of [OsF₆]²⁻ and PtF₆ complexes

Eduardo Solis-Céspedes, Luis Alvarez-Thon, Ramiro Arratia-Perez and Dayán Páez-Hernández*

9306



GAM-7: an organic–inorganic hybrid layered aluminophosphate crystal formed by zeolite transformation

Kenichi Komura,* Gensuke Nakai, Soki Shimizu, Matsuri Nomura, Shiori Niwa, Sanae Kagari, Kazuma Oka, Edo Imai, Hisakazu Aoki and Takuji Ikeda*

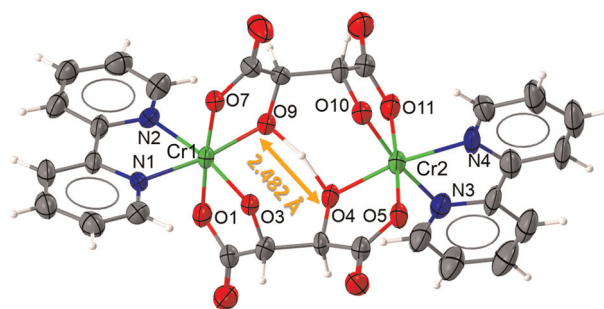


PAPERS

9315

A homochiral tartrate-bridged dinuclear chromium(III) complex anion with a resonance-assisted hydrogen bond for proton conduction

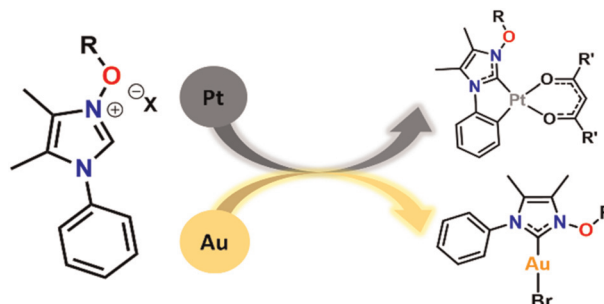
Marko Dunatov, Zhibo Zhao, Dijana Žilić and Lidija Androš Dubraja*



9323

Synthesis and characterization of Pt(II) and Au(I) complexes with *N*-oxy-heterocyclic carbene ligands (NOHCs)

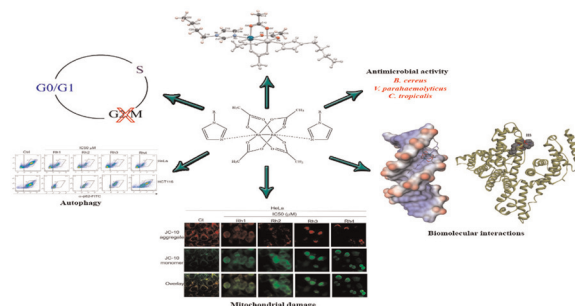
Alice Benin, Joshua Immanuel Kollar, Tim Riesebeck, Felix Wurl, Claudia Graiff, Thomas Strassner* and Cristina Tubaro*



9330

Search for new biologically active compounds: *in vitro* studies of antitumor and antimicrobial activity of dirhodium(II,II) paddlewheel complexes

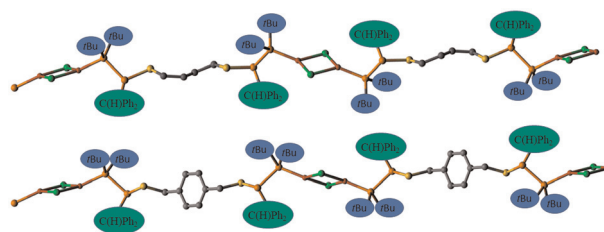
Marina Mitrović, Maja B. Djukić, Milena Vukić, Ivana Nikolić, Marko D. Radovanović, Jovan Luković, Ignjat P. Filipović, Sanja Matić, Tijana Marković, Olivera R. Klisurić, Suzana Popović, Zoran D. Matović and Marija S. Ristić*

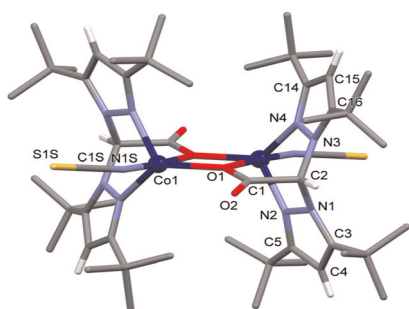


9350

From phosphanylphosphaalkenes to coordination copper and silver polymers containing P–P bonds

Aleksandra Ziółkowska, Marta Prześniak-Welenc, Tomasz Kruczyński, Michael Gamer and Łukasz Ponikiewski*





Kuheli Das, Belete B. Beyene,* Chiara Massera,
Eugenio Garribba, M. S. El Fallah, Antonio Frontera,
Chen-Hsiung Hung* and Amitabha Datta*

Triaz

PPA

Sulfonated original fluorophores
+
Control of intercalation in LDHs
+
Highly luminescent hybrid materials

$\lambda_{\text{exc}} = 300 \text{ nm}$
PLQY_{hv} = 55%

Guillaume Zerbib, Amélie Roux, Laurène Salat,
Federico Cisnetti,* Damien Boyer,*
Geneviève Chadeyron and Fabrice Leroux

The diagram illustrates the energy transfer mechanism and its application in anti-counterfeiting. On the left, the energy transfer process is shown in three stages: 1. **Without Tm³⁺**: Yb³⁺ (blue) is excited by a 980 nm laser, emitting a single peak at 656 W/cm². 2. **Trapping action**: Er³⁺ (red) is added, and the emission shifts to 56 W/cm². 3. **Synergistic sensitization**: Tm³⁺ (yellow) is added, resulting in a synergistic effect where the emission intensity is multiplied by 10 (×10). On the right, the **Advanced anti-counterfeiting** application is shown. A 980 nm laser is directed at a sample containing the Yb³⁺/Er³⁺/Tm³⁺ system. The sample shows a strong emission at 656 W/cm², while the background is at 0 W/cm². The emission is captured by a detector, showing a clear signal at 56 W/cm².

Jiaxin Li, Pengli Wang, Yujiao Zhang, Dan Xiao and
Cuisong Zhou*

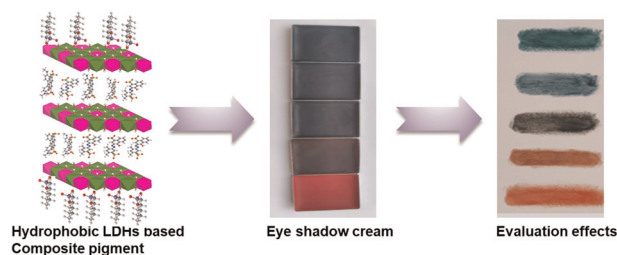
Ànnia Tubau, Silvia Gómez-Coca,* Saskia Speed,
Mercè Font-Bardía and Ramon Vicente*

PAPERS

9406

Preparation of hydrophobic layered double hydroxide-based composite pigments via octyltriethoxysilane surface modification for cosmetic applications

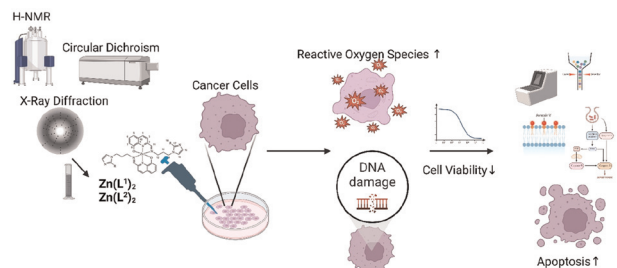
Ruiying Wang, Shuang Zhang, Xi Zhang* and Qi Liu



9416

Enhanced selectivity towards melanoma cells with zinc(II)-Schiff bases containing imidazole derivatives

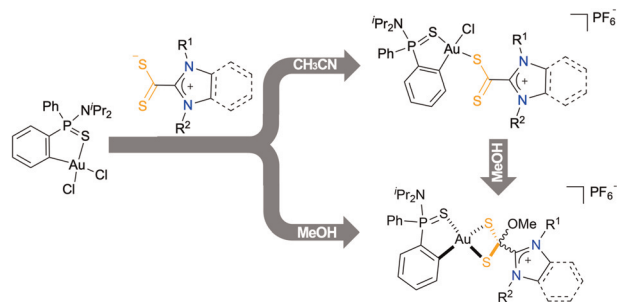
Leonor C  rte-Real, Baris Sergi, Busra Yildirim, Raquel Colucas, Radostaw Starosta, Xavier Fontrodona, Isabel Romero, V  nia Andr  , Ceyda Acilan* and Isabel Correia*



9433

Coordination of azol(in)ium dithiocarboxylate ligands to Au(III): unexpected formation of a novel family of cyclometallated Au(III) complexes, DFT calculations and catalytic studies

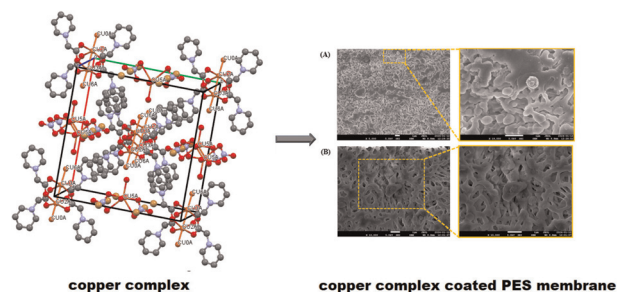
Paula P  rez-Ramos, Mar  a A. Mateo, David Elorriaga*, Daniel Garc  a-Viv  , Raquel G. Soengas* and Humberto Rodr  guez-Solla*



9441

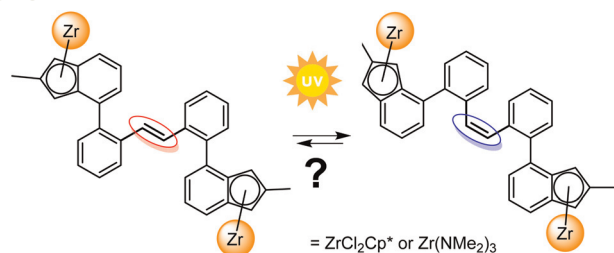
Synthesis and characterization of a novel copper carboxylate complex and a copper complex-coated polyether sulfone membrane for efficient degradation of methylene blue dye under UV irradiation: the single crystal X-ray structure of the copper carboxylate complex

Rupy Dhir, Bulle Shah and Narinder Singh*



PAPERS

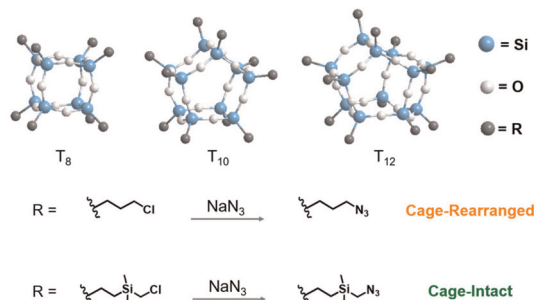
9452



Dinuclear group IV metal complexes based on a bis(indenyl)-(E/Z)-stilbene platform: a potential prototype of "photoswitchable" catalysts for olefin polymerization

Nuria Romero, Thierry Chavagnan, Thierry Roisnel, Alexandre Welle, Evgueni Kirillov* and Jean-François Carpentier*

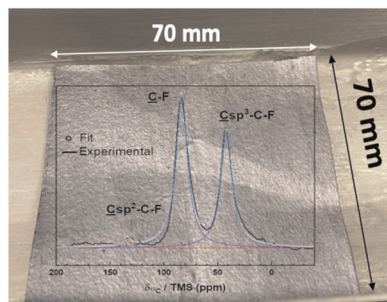
9467



Cage-rearranged and cage-intact syntheses of azido-functionalized larger T_{10} and T_{12} POSSs

Hui Wang, Ming-Xi Nie, Xiong Lin, Xiang-Qian Li, Hao Liu, Qing-Yun Guo,* Di Han* and Qiang Fu

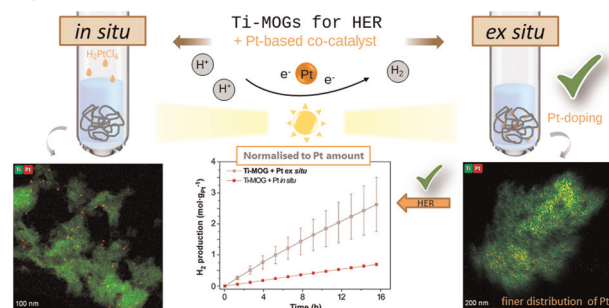
9473



Flexible fluorinated graphite foils with high contents of the $(\text{C}_2\text{F})_n$ phase for slow neutron reflectors

Killian Henry, Marie Colin, Gabin Chambéry, Brigitte Vigolo, Sébastien Cahen,* Claire Hérol, Valéry Nesvizhevsky, Sylvie Le Floch, Vittoria Pischedda, Sam Chen and Marc Dubois

9482



Unravelling co-catalyst integration methods in Ti-based metal–organic gels for photocatalytic H_2 production

Maite Perfecto-Irigaray, Garikoitz Beobide,* Oscar Castillo, Michael G. Allan, Moritz F. Kühnel,* Antonio Luque, Harishchandra Singh, Ashok Kumar Yadav and Sonia Pérez-Yáñez

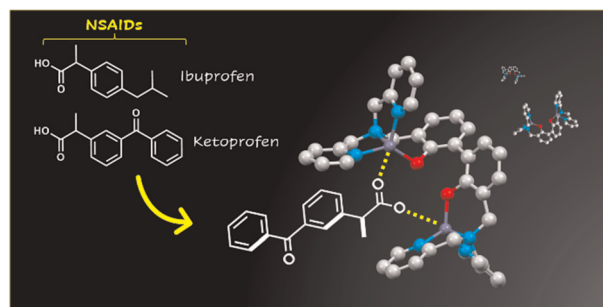


PAPERS

9495

A new biphenol-dipicolylamine based ligand and its dinuclear Zn²⁺ complex as fluorescent sensors for ibuprofen and ketoprofen in aqueous solution

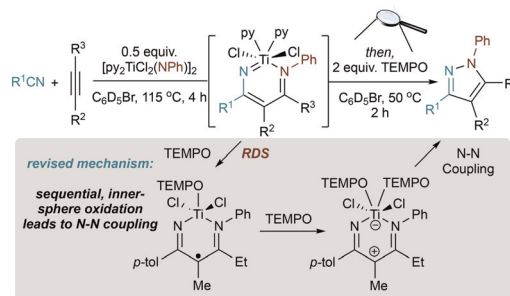
Daniele Paderni, Eleonora Macedi, Gina Elena Giacomazzo, Mauro Formica, Luca Giorgi, Barbara Valtancoli, Patrizia Rossi, Paola Paoli, Luca Conti,* Vieri Fusi* and Claudia Giorgi



9510

Mechanistic study of pyrazole synthesis via oxidation-induced N–N coupling of diazatitanacycles

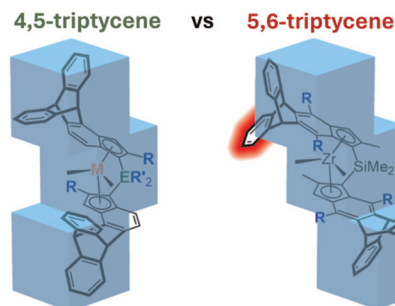
Yukun Cheng, Daniel N. Huh and Ian A. Tonks*



9516

Triptycene as a scaffold in metallocene catalyzed olefin polymerization

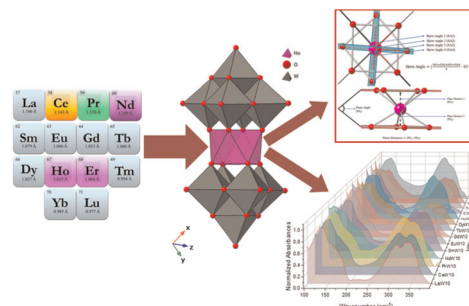
Pavel S. Kulyabin, Mikhail I. Sharikov, Vyatcheslav V. Izmer, Dmitry S. Kononovich, Georgy P. Goryunov, Nikita V. Alexeev, Dmitry V. Uborsky, Antonio Vittoria, Giuseppe Antinucci, Christian Ehm, Peter H. M. Budzelaar,* Roberta Cipullo, Vincenzo Busico* and Alexander Z. Voskoboynikov*



9526

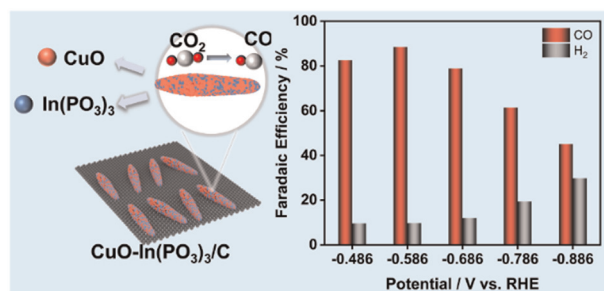
Structural and vibrational properties of lanthanide Lindqvist polyoxometalate complexes

Primadi J. Subintoro and Korey P. Carter*



PAPERS

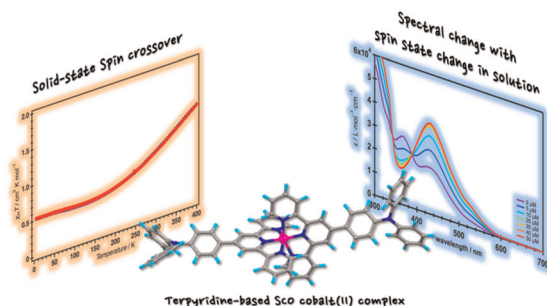
9540



Promotional effects of In(PO₃)₃ on the high catalytic activity of CuO-In(PO₃)₃/C for the CO₂ reduction reaction

Chengtao Ruan, Zhihui Zhao, Hui Wu, Jiaqian Liu, Yuande Shi,* Lingxing Zeng* and Zhongshui Li*

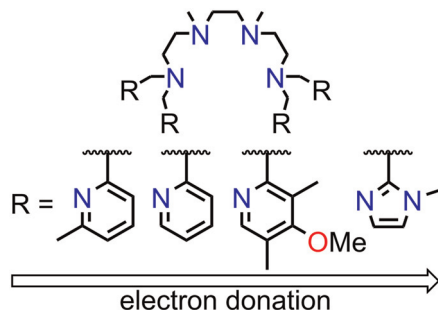
9547



Spin-crossover cobalt(II) complexes exhibiting temperature- and concentration-dependent optical changes in solution

Naoki Izumiyama, Shun Fujii, Kiichi Kato, Ryuya Tokunaga, Shinya Hayami and Manabu Nakaya*

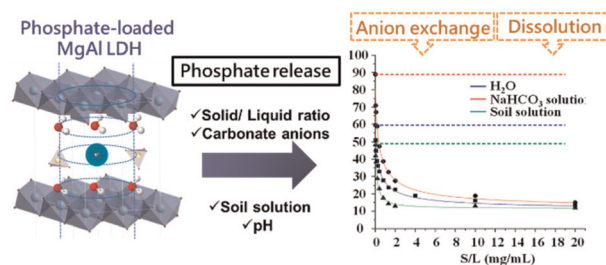
9554



Increasing the electron donation in a dinucleating ligand family: molecular and electronic structures in a series of Co^{II}/Co^{III} complexes

Felix Depenbrock, Thomas Limpke, Anja Stammmler, Jan Oldengott, Hartmut Bögge and Thorsten Glaser*

9568



In-depth characterization of phosphate intercalated Mg Al Layered double hydroxides and study of the PO₄ release properties

Alexandra Jourdain, Christine Taviot-Gueho, Ulla Gro Nielsen, Vanessa Prévot* and Claude Forano*

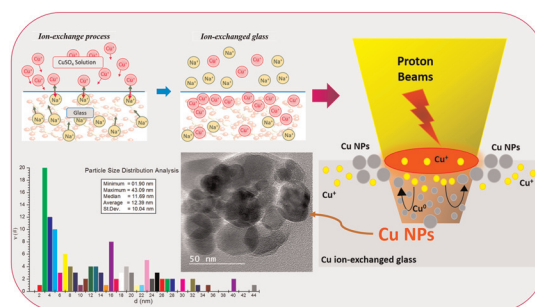


PAPERS

9578

Copper nanoparticle and point defect formation in Cu⁺–Na⁺ ion-exchanged glass using protons of 2 MeV energy

Safa Toumi,* Alaa Adawy,* Alberto Quaranta and Khaled Farah



9590

On the mechanism of sp² C–H borylation using *ortho*-*N*-substituted pyridinium cations

Nikita Slesarchuk, Enlu Ma, Juan Miranda-Pizarro, Sami Heikkinen, Dieter Schollmeyer, Martin Nieger, Petra Vasko and Timo Repo*

