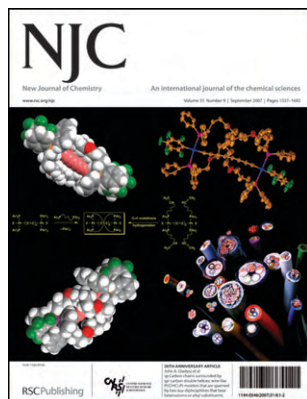


IN THIS ISSUE

ISSN 1144-0546 CODEN NJCHES 31(9) 1537-1692 (2007)



Cover

See John A. Gladysz *et al.*, p. 1594. Insulated wires are commercially available in countless motifs, and chemists are engineering an ever-growing portfolio of molecular analogs, as exemplified by two syntheses of PtCxPt complexes in which the sp carbon chains are shielded by two functionalized flexible sp³ chains.

Image reproduced by permission of Laura de Quadras, Eike B. Bauer, Jürgen Stahl, Fedor Zhuravlev, Frank Hampel and John A. Gladysz, *New J. Chem.*, 2007, **31**, 1594.

CHEMICAL SCIENCE

C65

Drawing together the research highlights and news from all RSC publications, *Chemical Science* provides a 'snapshot' of the latest developments across the chemical sciences showcasing newsworthy articles, as well as the most significant scientific advances.

Chemical Science

September 2007/Volume 4/Issue 9

www.rsc.org/chemicalscience

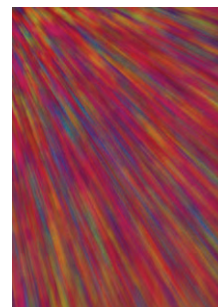
EDITORIAL

1551

Important news for authors of articles containing X-ray crystallography

Jamie Humphrey

New guidelines for the assessment and publication of X-ray crystallography in RSC Journals have been announced.



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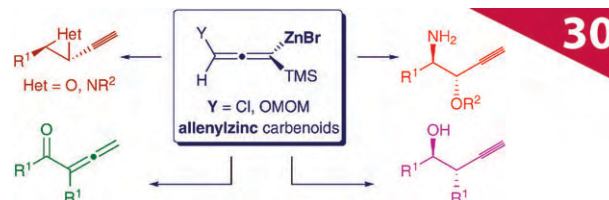
PERSPECTIVE

1552

Allenylzinc reagents: new trends and synthetic applications

Candice Botuha, Fabrice Chemla,* Franck Ferreira, Alejandro Pérez-Luna and Brindaban Roy

30th Anniversary article: Allenylzincs are precursors for propargylic and allenic structures.



LETTERS

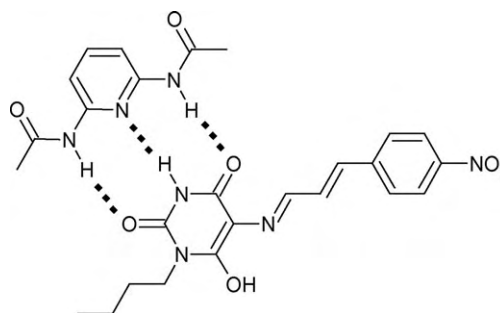


1568

Solvatochromic properties of Schiff bases derived from 5-aminobarbituric acid: chromophores with hydrogen bonding patterns as components for coupled structures

Ina Bolz, Claudia May and Stefan Spange*

A switchable and chromophoric Schiff base, containing an enolizable barbituric acid moiety as a novel UV/vis probe, is presented that can synergistically measure both polarity effects and hydrogen bonding patterns.

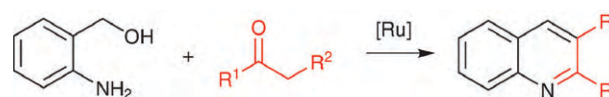


1572

Improved ruthenium catalysts for the modified Friedlaender quinoline synthesis

Hans Vander Mierde, Nele Ledoux, Bart Allaert, Pascal Van Der Voort, Renata Drozdak, Dirk De Vos and Francis Verpoort*

Ruthenium complexes catalyse the oxidative cyclization of 2-aminobenzylalcohol with ketones, leading to quinolines.

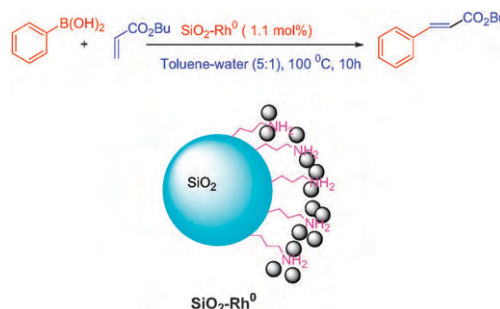


1575

Catalysis of the Heck-type reaction of alkenes with arylboronic acids by silica-supported rhodium: an efficient phosphine-free reusable catalytic protocol

Rajiv Trivedi,* Sarabindu Roy, Moumita Roy, B. Sreedhar and M. Lakshmi Kantam

A 3-aminopropyl-functionalized silica-supported rhodium(0) catalyst ($\text{SiO}_2\text{-Rh}^0$) was employed in the Heck-type coupling of arylboronic acids and alkenes, affording good-to-excellent yields of substituted olefins; the catalyst was recovered and reused for several cycles.



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LETTERS



1579

Novel polymer-supported ruthenium and iron complexes that catalyze the conversion of epoxides into diols or diol mono-ethers: clean and recyclable catalysts

Sun Hwa Lee, Eun Yong Lee, Dong-Woo Yoo, Sung Jin Hong, Jung Hwan Lee, Han Kwak, Young Min Lee, Jinheung Kim, Cheal Kim* and Jin-Kyu Lee*

Polymer-supported metal catalysts showed efficient heterogeneous catalytic activity and easy recyclability in epoxide ring opening reactions under mild conditions.

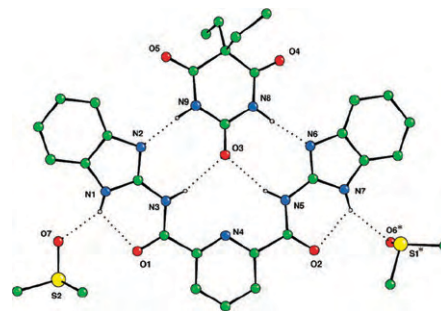


1583

A simple benzimidazole-based receptor for barbiturate and urea neutral guests that functions in polar solvent mixtures

Matthew G. Fisher, Philip A. Gale* and Mark E. Light

A 2,6-dicarboxamidopyridine cleft with appended benzimidazole groups functions as a receptor for neutral guests in solvent mixtures of DMSO-*d*₆ and MeNO₂-*d*₃.



PAPERS

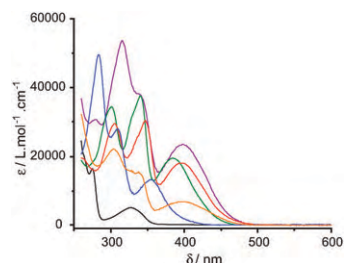


1585

2,6-Diaryl-9,10-anthraquinones as models for electron-accepting polymers

Julien E. Gautrot,* Philip Hodge,* Domenico Cupertino and Madeleine Helliwell

Electron accepting 2,6-diaryl-9,10-anthraquinones were synthesised and their photophysical and electrochemical properties studied.

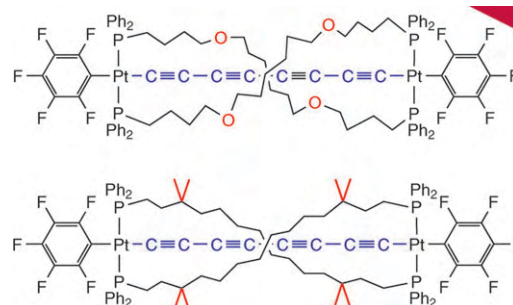


1594

sp Carbon chains surrounded by sp³ carbon double helices: wire-like Pt(C≡C)_nPt moieties that are spanned by two α,ω-diphosphines that bear heteroatoms or alkyl substituents

Laura de Quadras, Eike B. Bauer, Jürgen Stahl, Fedor Zhuravlev, Frank Hampel and John A. Gladysz*

30th Anniversary article: The title complexes, which can be viewed as insulated molecular wires, are synthesized by alkene metathesis/hydrogenation sequences or coordination-driven self assembly.



30

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Advanced nuclear analytical techniques for metalloproteomics

Yuxi Gao, Chunying Chen and Zhifang Chai, *J. Anal. At. Spectrom.*, 2007, **22**, 856

DOI: 10.1039/b703323k

Articles:

Investigation of the selenium species distribution in a human B-cell lymphoma line by HPLC- and GC-ICP-MS in combination with HPLC-ESIMS/MS and GC-TOFMS after incubation with methylseleninic acid

Heidi Goenaga Infante, Simon P. Joel, Emma Warburton, Christopher Hopley, Ruth Hearn and Simone Jülicher, *J. Anal. At. Spectrom.*, 2007, **22**, 888

DOI: 10.1039/b708620b

Laser ablation-ICP-MS assay development for detecting Cd- and Zn-binding proteins in Cd-exposed *Spinacia oleracea* L.

Aleksandra Polatajko, Marisa Azzolini, Ingo Feldmann, Thomas Stuezel and Norbert Jakubowski, *J. Anal. At. Spectrom.*, 2007, **22**, 878

DOI: 10.1039/b703245e

Analysis of phytochelatins in nopal (*Opuntia ficus*): a metallomics approach in the soil–plant system

Julio Alberto Landero Figueroa, Scott Afton, Kazimierz Wrobel, Katarzyna Wrobel and Joseph A. Caruso, *J. Anal. At. Spectrom.*, 2007, **22**, 897

DOI: 10.1039/b703912c

Mass spectrometric analysis of ubiquitin–platinum interactions of leading anticancer drugs: MALDI versus ESI

Christian G. Hartinger, Wee Han Ang, Angela Casini, Luigi Messori, Bernhard K. Keppler and Paul J. Dyson, *J. Anal. At. Spectrom.*, 2007, **22**, 960

DOI: 10.1039/b703350h

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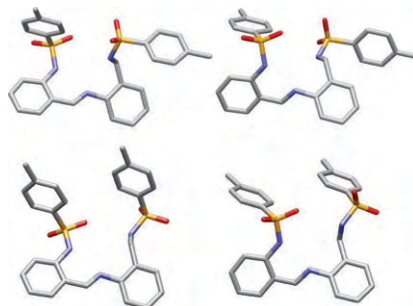
PAPERS

1605

Trimorphism of an asymmetric disulfonamide Schiff base

Jesús Sanmartín,* Fernando Novio, Ana M. García-Deibe, Matilde Fondo and Manuel R. Bermejo

Some structural features leading to polymorphism are studied for four conformers present in three polymorphs solved for a Schiff base obtained by condensation of the selectively functionalised 2-(tosylaminomethyl)aniline with 2-tosylaminobenzaldehyde.

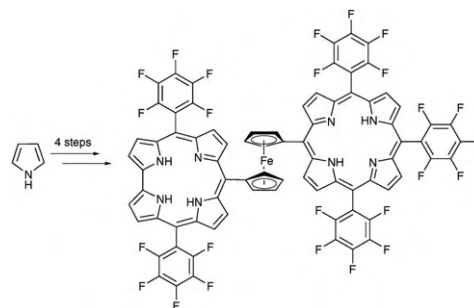


1613

Synthesis and properties of directly linked corrole–ferrocene systems

Daniel T. Gryko,* Joanna Piechowska, Jan S. Jaworski, Michał Gałęzowski, Mariusz Tasior, Marek Cembor and Holger Butenschön*

Directly linked ferrocene–corroles and 1-(corrolyl)-1'-(porphyrinyl)ferrocene can be easily assembled using bilanes' synthesis in the H_2O – MeOH – HCl system.

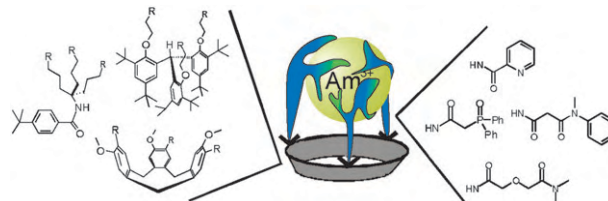


1620

Influence of the platform in multicoordinate ligands for actinide partitioning

Henk H. Dam, David N. Reinhoudt and Willem Verboom*

The extraction efficiencies of multicoordinate ligands are largely influenced by the platform with D -values for Am^{3+} complexation following the order $\text{CTV6} > \text{trityl} \approx \text{C-pivot} > \text{CTV3} > \text{CTV0}$ with a maximum for CTV6CMPO of $D_{\text{Am}} = 30$.

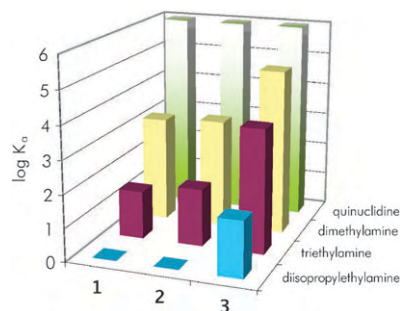


1633

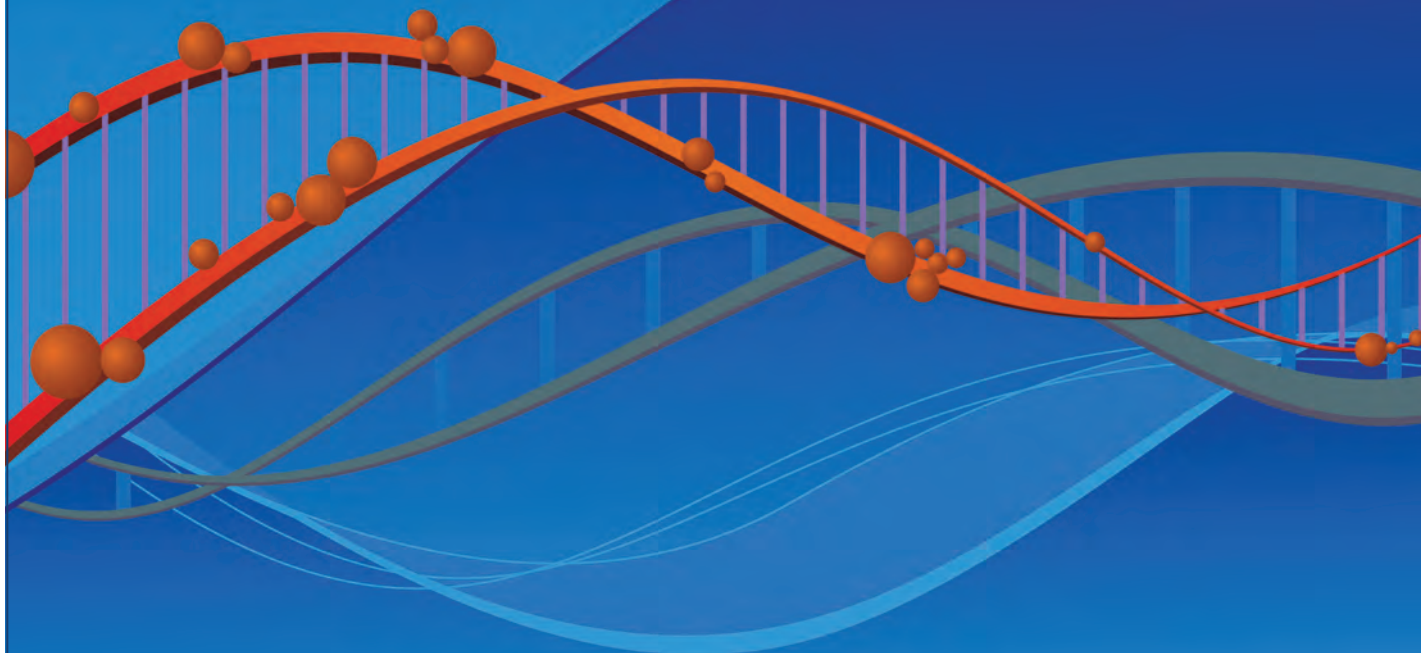
Zinc–salophen complexes as selective receptors for tertiary amines

Antonella Dalla Cort,* Luigi Mandolini, Chiara Pasquini, Kari Rissanen,* Luca Russo and Luca Schiaffino

New zinc–salophen compounds incorporating 1,2-diaminobenzene, 2,3-diaminonaphthalene, and 9,10-diaminophenanthrene moieties were synthesised and their binding properties toward a series of tertiary amines were assessed in CHCl_3 . Unprecedented selectivities of quinuclidine vs. triethylamine higher than 10^5 were recorded.



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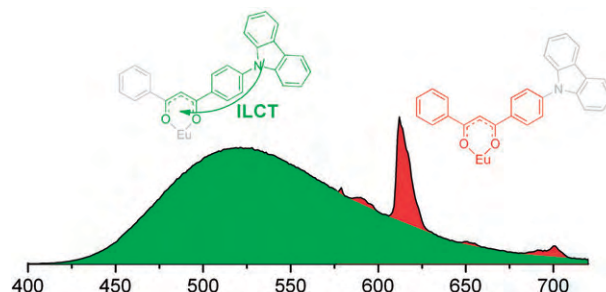
PAPERS

1639

Energy transfer pathways in the carbazole functionalized β -diketonate europium complexes

Daobo Nie, Zhuqi Chen, Zuqiang Bian,* Jianqiang Zhou, Zhiwei Liu, Fangfang Chen, Yongliang Zhao and Chunhui Huang*

Photophysical studies demonstrated that Eu^{3+} can not be sensitized by the internal ligand charge transfer excited states of CDBM in the $\text{Eu}(\text{CDBM})_3 \cdot 2\text{H}_2\text{O}$ system.

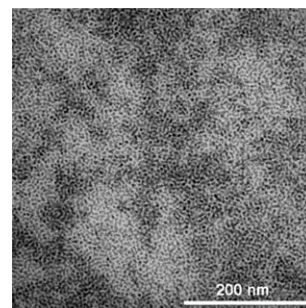


1647

Cadmium(II) complexes of *N,N*-diethyl-*N'*-benzoylthio(seleno)urea as single-source precursors for the preparation of CdS and CdSe nanoparticles

Jocelyn C. Bruce, Neerish Revaprasadu and Klaus R. Koch*

Thermolysis of *N,N*-diethyl-*N'*-benzoylthio(seleno)urea Cd(II) complexes resulted in the formation of cubic phased HDA stabilised CdS and CdSe quantum dots.

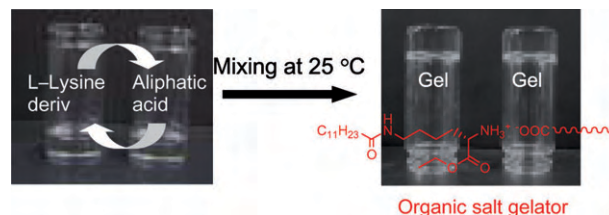


1654

Supramolecular organogel formation triggered by acid–base interaction in two-component system consisting of L-lysine derivative and aliphatic acids

Masahiro Suzuki,* Hiroaki Saito, Hirofusa Shirai and Kenji Hanabusa

The formation of supramolecular organogels using an acid–base interaction was investigated in organogelation systems consisting of *N*^c-lauroyl-L-lysine ethyl ester and aliphatic acids.

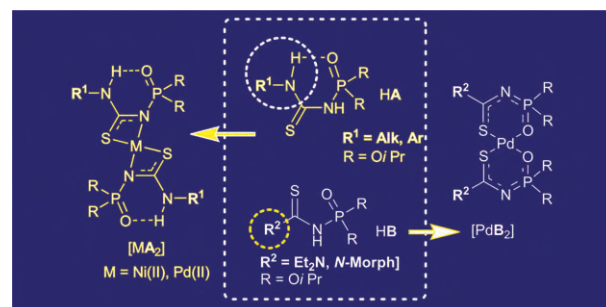


1661

The influence of the intramolecular hydrogen bond on the 1,3-*N,S*- and 1,5-*O,S*-coordination of *N*-phosphoryl-*N'*-(*R*)-thioureas with Ni(II) and Pd(II)

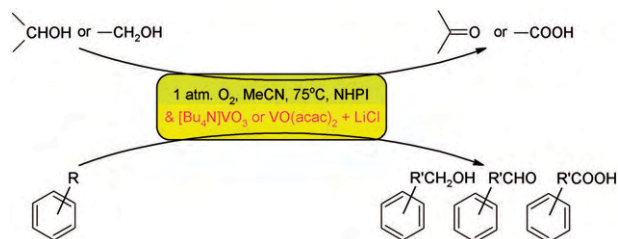
Felix D. Sokolov,* Sergey V. Baranov, Damir A. Safin,* F. Ekkehardt Hahn, Maria Kubiak, Tania Pape, Maria G. Babashkina, Nail G. Zabirow, Joanna Galezowska, Henryk Kozłowski and Rafael A. Cherkasov

The coordination mode of *N*-phosphorylthiourea ligands HA and HB with Ni^{II} and Pd^{II} cations depends on the intramolecular hydrogen bond $\text{P}=\text{O} \cdots \text{HNR}$ formation.



PAPERS

1668

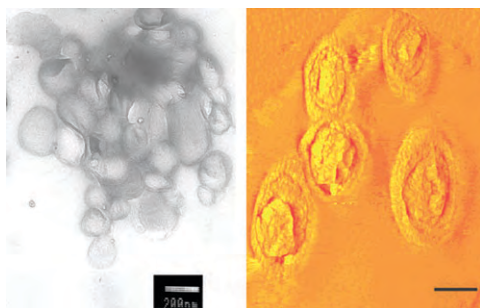


Aerobic oxidation of alcohols and alkylaromatics with dioxygen catalysed by *N*-hydroxyphthalimide with vanadium co-catalysts

P. J. Figiel and J. M. Sobczak*

$[Bu_4N]VO_3$ or a combination of $VO(acac)_2$ with LiCl or $[Bu_4N]Cl$ are attractive co-catalysts for oxidation reactions of organic compounds with dioxygen catalysed by *N*-hydroxyphthalimide.

1674

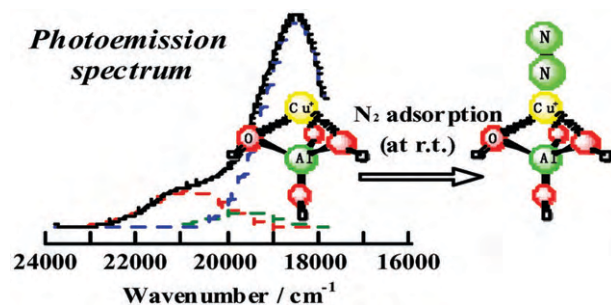


Self-assembly of supramolecular nanostructures from phenylalanine derived bolaamphiphiles

Monica Z. Menzenski and Ipsita A. Banerjee*

The growth and self-assembly of phenylalanine derived bolaamphiphiles was investigated. The self-assembly process was studied at hydrophobic–hydrophilic interfaces and under aqueous conditions at different pH.

1681



New insight into N_2 adsorption and ion-exchange features of CuMFI with different Si/Al ratios

Atsushi Itadani, Masashi Tanaka, Yasushige Kuroda* and Mahiko Nagao

The Cu^+ species responsible for the photoemission at $18\,500\,cm^{-1}$ in the 873 K-treated CuMFI sample, which adopts a three-coordinate structure involving lattice oxygen atoms, strongly interact with an N_2 molecule at room temperature (r.t.); such Cu^+ species were formed at a higher rate in MFI with higher Si/Al ratios.

AUTHOR INDEX

- Allaert, Bart, 1572
 Babashkina, Maria G., 1661
 Banerjee, Ipsita A., 1674
 Baranov, Sergey V., 1661
 Bauer, Eike B., 1594
 Bermejo, Manuel R., 1605
 Bian, Zuqiang, 1639
 Bolz, Ina, 1568
 Botuha, Candice, 1552
 Bruce, Jocelyn C., 1647
 Butenschön, Holger, 1613
 Cembor, Marek, 1613
 Chemla, Fabrice, 1552
 Chen, Fangfang, 1639
 Chen, Zhuqi, 1639
 Cherkasov, Rafael A., 1661
 Cupertino, Domenico, 1585
 Dalla Cort, Antonella, 1633
 Dam, Henk H., 1620
 De Vos, Dirk, 1572
 de Quadras, Laura, 1594
 Drozdak, Renata, 1572
 Ferreira, Franck, 1552
 Figiel, P. J., 1668
 Fisher, Matthew G., 1583
 Fondo, Matilde, 1605
 Gale, Philip A., 1583
 Galezowska, Joanna, 1661
 Gałęzowski, Michał, 1613
 García-Deibe, Ana M., 1605
 Gautrot, Julien E., 1585
 Gladysz, John A., 1594
 Gryko, Daniel T., 1613
 Hampel, Frank, 1594
 Hanabusa, Kenji, 1654
 Hahn, F. Ekkehardt, 1661
 Helliwell, Madeleine, 1585
 Hodge, Philip, 1585
 Hong, Sung Jin, 1579
 Huang, Chunhui, 1639
 Humphrey, Jamie, 1551
 Itadani, Atsushi, 1681
 Jaworski, Jan S., 1613
 Kantam, M. Lakshmi, 1575
 Kim, Cheal, 1579
 Kim, Jinheung, 1579
 Koch, Klaus R., 1647
 Kozłowski, Henryk, 1661
 Kubiak, Maria, 1661
 Kuroda, Yasushige, 1681
 Kwak, Han, 1579
 Ledoux, Nele, 1572
 Lee, Eun Yong, 1579
 Lee, Jin-Kyu, 1579
 Lee, Jung Hwan, 1579
 Lee, Sun Hwa, 1579
 Lee, Young Min, 1579
 Light, Mark E., 1583
 Liu, Zhiwei, 1639
 Mandolini, Luigi, 1633
 May, Claudia, 1568
 Menzenski, Monica Z., 1674
 Nagao, Mahiko, 1681
 Nie, Daobo, 1639
 Novio, Fernando, 1605
 Pape, Tania, 1661
 Pasquini, Chiara, 1633
 Pérez-Luna, Alejandro, 1552
 Piechowska, Joanna, 1613
 Reinhoudt, David N., 1620
 Revaprasadu, Neerish, 1647
 Rissanen, Kari, 1633
 Roy, Brindaban, 1552
 Roy, Moumita, 1575
 Roy, Sarabindu, 1575
 Russo, Luca, 1633
 Safin, Damir A., 1661
 Saito, Hiroaki, 1654
 Sanmartín, Jesús, 1605
 Schiaffino, Luca, 1633
 Shirai, Hirofusa, 1654
 Sobczak, J. M., 1668
 Sokolov, Felix D., 1661
 Spange, Stefan, 1568
 Sreedhar, B., 1575
 Stahl, Jürgen, 1594
 Suzuki, Masahiro, 1654
 Tanaka, Masashi, 1681
 Tasior, Mariusz, 1613
 Trivedi, Rajiv, 1575
 Van Der Voort, Pascal, 1572
 Vander Mierde, Hans, 1572
 Verboom, Willem, 1620
 Verpoort, Francis, 1572
 Yoo, Dong-Woo, 1579
 Zabirow, Nail G., 1661
 Zhao, Yongliang, 1639
 Zhou, Jianqiang, 1639
 Zhuravlev, Fedor, 1594

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