Reviews are listed in order of appearance in the sources indicated. In multidisciplinary review journals, only those reviews which fall within the scope of this Journal are included. Sources are listed alphabetically in three categories: regularly issued review journals and series volumes, contributed volumes, and other monographs. Titles are numbered serially, and these numbers are used for reference in the index.

Major English-language sources of critical reviews are covered. Encyclopedic treatises, annual surveys such as Specialist Periodical Reports, and compilations of symposia proceedings are omitted.

This installment of Recent Reviews covers principally the middle part of the 2012 literature. Previous installment: J. Org. Chem. 2012, 77(20).

Additional Information Available: A file containing this Recent Review compilation in Microsoft Word and the data in plain text that can be imported into Endnote (using Refer style) and Reference Manager databases.

Regularly Issued Journals and Series Volumes

Accounts of Chemical Research


Advances in Heterocyclic Chemistry

16. Alkorta, I.; Elguero, J.; Roussel, C.;

Angewandte Chemie, International Edition in English

33. Melchiorre, P. Cinchona-Based Primary Amine Catalysis in the Asymmetric Functionalization of Carbonyl Compounds. 2012, 51(39), 9748–70.

Chemical Reviews

42. Arockiam, P. B.; Bruneau, C.; Dixneuf, P. H. Ruthenium(II)-Catalyzed C-H Bond Activation and Functionalization. 2012, 112(11), 5879–918.

Chemical Society Reviews

50. Sundraraju, B.; Achar, M.; Bruneau, C.


Chemistry - A European Journal


68. Mazzoni, R.; Salmi, M.; Zanotti, V. C-C Bond Formation in Diiron Complexes. 2012, 18(33), 10174–94.


Chemistry of Heterocyclic Compounds


Coordination Chemistry Reviews


Current Organic Chemistry


Current Organic Synthesis


European Journal of Organic Chemistry

Heterocycles


Journal of Fluorine Chemistry


Journal of Heterocyclic Chemistry


Journal of Organometallic Chemistry


Organometallics

146. Morais, G. R.; Paulo, A.; Santos, I. Organometallic Complexes for SPECT Imaging and/or Radionuclide Therapy. 2012, 31(16), 5693–714.
148. Pike, R. D. Structure and Bonding in Copper(I) Carbonyl and Cyanide Complexes. 2012,
Pure and Applied Chemistry


Matsuo, Y. Development of Fullerene Derivatives with High LUMO Levels Through Changes in π-Conjugated System Shape. 2012, 84(4), 945–52.


Banwell, M. G.; Gao, N.; Ma, X.; Petit, L.; White, L. V.; Schwartz, B. D.; Willis, A. C.; Cade, I. A. cis-1,2-Dihydroxycatechols as Building Blocks in alkaloid Synthesis. 2012, 84(6), 1329–39.


McLeod, M. C.; Brimble, M. A.; Rathwell, D. C. K.; Wilson, Z. E.; Yuen, T.-Y. Synthetic Approaches to [5,6]-Benzannulated Spiroketal Natural Products. 2012, 84(6), 1379–90.


Maruoka, K. Designer Chiral Phase-Transfer Catalysts for Green Sustainable Chemistry. 2012, 84(7), 1575–85.


Cena, G.; Chiarucci, M.; Bandini, M. Accessing Chemical Diversity by Stereoselective Gold-Catalyzed Manipulation of Allylic and Propargylic Alcohols. 2012, 84(8), 1673–84.


Suginome, M.; Yamamoto, T.; Nagata, Y.;

Russian Chemical Reviews


Science


Synlett


198. Wong, S. M.; So, C. M.; Kwong, F. Y. The Recent Development of Phosphate Ligands Derived from 2-Phosphino-Substituted Heterocycles and Their Applications in Palladium-Catalyzed Cross-Coupling Reactions. 2012, 23(8), 1132–53.


201. Green, J. R. Alkynecobalt Complexes in γ-Carbonyl Cations and Cycloheptynecobalt Complexes. 2012, 23(9), 1271–82.


214. Zhang, Z.-J.; Liu, Y. Construction and
Function of Interverneted Molecules Based on the Positively Charged Axle Components. 2012, 23(12), 1733–50.


Synthesis-Stuttgart


Tetrahedron


238. Singh, M. S.; Raghuvanshi, K. Recent Advances in InCl3-Catalyzed One-Pot Organic Synthesis. 2012, 68(42), 8683–97.


242. Hemantha, H. P.; Narendra, N.; Sureshbabu, V. V. Total Chemical Synthesis of Polypeptides and Proteins: Chemistry of Ligation Techniques and Beyond. 2012, 68(47), 9491–537.

Topics in Current Chemistry


247. van Eldijk, M. B.; McGann, C. L.; Kiick, K. L.; van Hest, J. C. M. Elastomeric Polypeptides. 2012,


Monographs


279. Petrukhina, M. A.; Scott, L. T.; Eds. Fragments of Fullerenes and Carbon Nanotubes:


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