Russian Chemical Reviews

Основана в 1724 году
Российская академия наук

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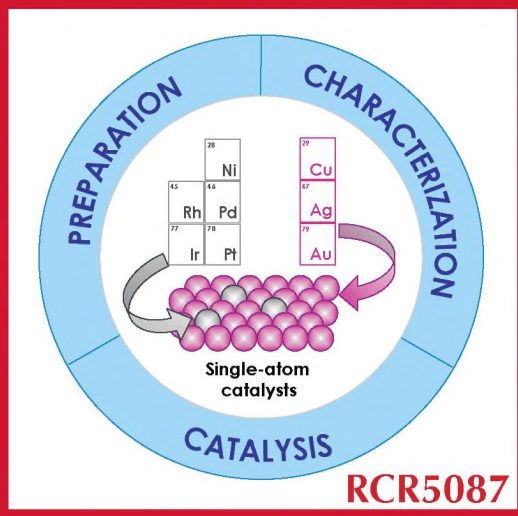

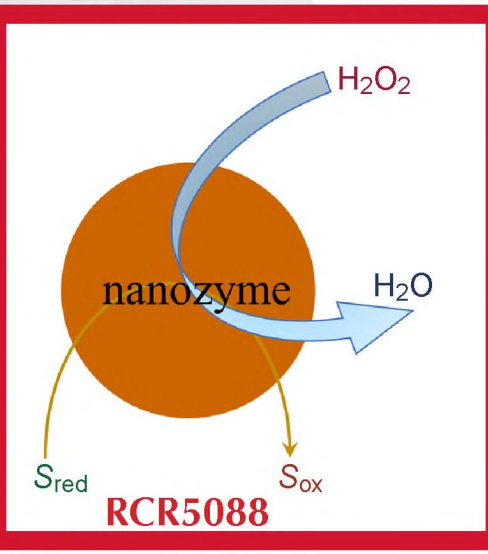

Обзорный журнал по химии

Том 92 Номер 8 2023

ISSN 0042-1308

Успехи химии

Том 92
Номер 8
2023

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Russian Chemical Reviews

Volume 92 Number 8 2023

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Advances in the chemistry of 1,2,3,4-tetrazines

RCR5089

M.S.Klenov, A.A.Voronin, A.M.Churakov, V.A.Tartakovsky

N.D.Zelinsky Institute of Organic Chemistry, Russian Academy of Sciences, Moscow, Russia

The experimental and theoretical chemistry of 1,2,3,4-tetrazines has been actively studied in the last 20 years. The increasing interest in this class of compounds is due to the fact that the 1,2,3,4-tetrazine ring is a promising building block for the development of energetic and physiologically active compounds. The review considers various types of 1,2,3,4-tetrazines including completely unsaturated non-annulated tetrazines and their N-oxides; nitrogen-substituted tetrazines; annulated tetrazines with a nitrogen atom common to two heterocycles; 1,2,3,4-tetrazine 1,3-dioxides fused to benzene, pyridine, 1,2,3-triazole and 1,2,5-oxadiazole rings; and also 1,2,3,4-tetrazine 1,3-dioxide fused to one more 1,2,3,4-tetrazine 1,3-dioxide ring. Methods of synthesis and reactivity of these compounds, their crystallographic features, spectral characteristics and thermal stability are described. The results of quantum chemical studies for 1,2,3,4-tetrazine derivatives are considered. The prospects of using 1,2,3,4-tetrazines as energetic compounds are discussed.
Bibliography — 189 references.