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Robert LaDuca, Jared J. Paul and George Christou

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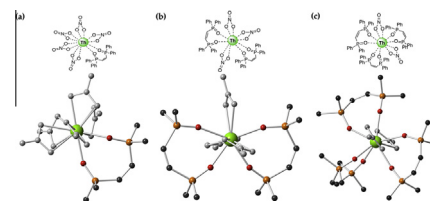
Preface

Paul T. Morse, Richard J. Staples and Shannon M. Biros

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Th(IV) complexes with *cis*-ethylenebis(diphenylphosphine oxide): X-ray structures and NMR solution studies

Seven crystal structures are reported containing Th(IV) coordinated with a rigid, diphosphine oxide ligand. This solid-state work is accompanied by IR and CHN analysis, as well as ^1H and ^{31}P NMR solution data.

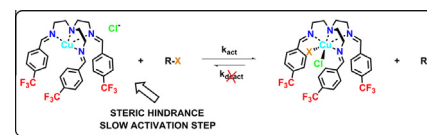


Katherine A. Bussey, Annie R. Cavalier, Jennifer R. Connell, Margaret E. Mraz, Ashley Holderread, Kayode D. Oshin, Lauren Cordeiro, Tomislav Pintauer, Michelle V. Joyce and Matthias Zeller

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Synthesis, characterization, X-ray crystallography analysis and kinetic study of *tris*(2-(4-trifluoromethylbenzylideneamino)ethyl)amine copper derivatives

Slowing down the activation rate step during the addition of highly active alkyl-halide initiator to copper(I) complex by incorporating a bulky ligand motif with electron withdrawing functional group. The design allowed for activation rate constant values to be determined using UV-Vis spectroscopy.

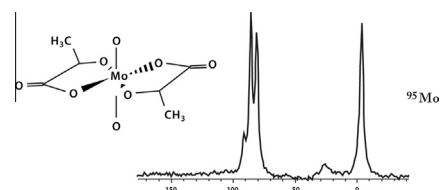


Claude H. Yoder, Emily L. Christie and Jennifer L. Morford

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^{95}Mo NMR study of the effect of structure on complexation of molybdate with alpha and beta hydroxy carboxylic acid ligands

The utility of the quadrupolar, spin 5/2 ^{95}Mo nucleus in NMR studies of complexation of molybdate have been demonstrated using model alpha hydroxy carboxylic acids. The ^{95}Mo NMR spectra show a down field shift of the resonance upon complexation, presumably due to the smaller $1/\Delta E$ paramagnetic shift term for the octahedral molybdate complexes relative to the tetrahedral molybdate ion. The ^{95}Mo resonances are sufficiently distinct to establish three solution complexes for the reaction of lactic acid with molybdate. The Lewis acidity of the negatively charged molybdate ion is rationalized with two schemes for the reaction with the chelating bidentate alpha hydroxy carboxylic acids.

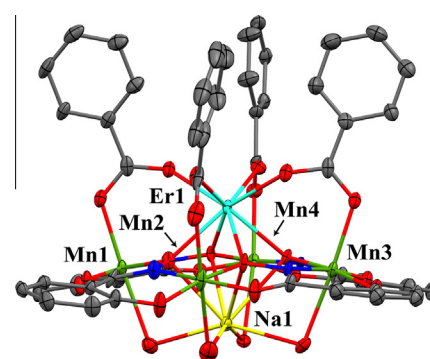


Jordan R. Travis, Matthias Zeller and Curtis M. Zaleski

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Facile carboxylate ligand variation of hetero-trimetallic 12-metallacrown-4 complexes

Three single-crystal X-ray structures of a series of $\text{Er}^{\text{III}}\text{Na}(\text{L})_4[12\text{-MC}_{\text{Mn}^{\text{II}}}(\text{N})\text{shi}^{-4}]$ complexes, where L is either trimethylacetate, benzoate, or salicylate and shi^{3-} is salicylhydroximate, are presented. The self-assembled supramolecular coordination complexes demonstrate the ability to vary the bridging carboxylate monoanion in this heterotrimetallic family of compounds.

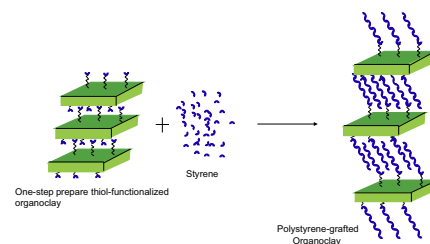


LeAnna Survant, Marina Andrejevic, Jesse Picker, Jasper Van Den Hoek, Eric Fossum and Isabelle Lagadic

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Surface-initiated polymerization of styrene from one-step prepared thiol-functionalized organoclays

Radical polymerization of styrene from the surface of one-step prepared thiol-functionalized organoclays produced polystyrene-organoclay composite materials exhibiting a direct covalent bonding between the organoclay fillers and the polystyrene, an exfoliated structure and high content of grafted polystyrene.

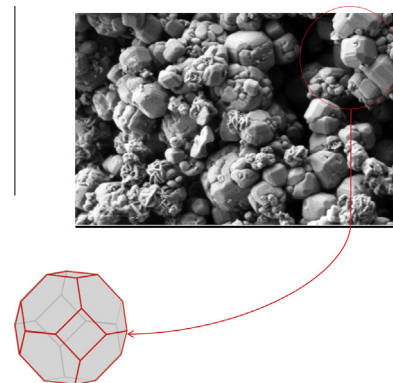


Michael Giroux, Emily Sahadeo, Robert Libera, Ashley Maurizi, Ian Giles and Anne Marteel-Parrish

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An undergraduate research experience: Synthesis, modification, and comparison of hydrophobicity of zeolites A and X

The focus of this research was to delineate a method to increase the hydrophobicity of zeolites A and X. Functionalization of the zeolites with silane ligands of various sizes was explored in depth. Infrared spectroscopy, SEM, TGA and a macroscopic evaluation aided in the final characterization.



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