

Metal Phosphonate Chemistry: From Synthesis to Applications | 2012 | 9781849733564 | 655 pages | Royal Society of Chemistry, 2012 | Abraham Clearfield, Konstantinos Demadis

Metal Phosphonate Chemistry: From Synthesis to Applications. Book. Jan 2012. Abraham Clearfield. Metal phosphonate chemistry is a highly interdisciplinary field, as it encompasses several other areas, such as materials chemistry, gas storage, pharmaceuticals, corrosion control, classical chemical synthesis, X-ray crystallography, powder diffraction, etc. It has also acquired additional significance due to "Metal-Organic Frameworks", as evidenced by the hundreds of papers published each year. This book fills the gap in the literature by summarising, in a concise way, the latest developments in the field. Metal phosphonate chemistry has seen impressive growth in the last 15-20 years. Metal phosphonate chemistry is a highly interdisciplinary field, as it encompasses several other areas, such as materials chemistry, gas storage, pharmaceuticals, corrosion control, classical chemical synthesis, X-Ray crystallography, powder diffraction, etc. It has also acquired additional significance due to. publisher. Royal Society of Chemistry. isbn. 978-1-84973-356-4. year published. 2012. book digital object identifier (doi). 10.1039/9781849733571. link. Elsevier. 2006. 336 p. Chemistry and Application of H-Phosphonates is an excellent source for those planning the synthesis of new phosphorus-containing compounds and in particular derivatives containing a phosphonate, phosphoramidate or phosphonic acid diester group. The rich chemistry, low cost and easy availability of diesters of H-phosphonic acid makes them an excellent choice as synthone in a number of practically important reactions. Phosphonic acid esters are intermediates in the synthesis of important classes of compounds such as alpha-aminophosphonic acids, bisphosphonates, epoxyalkylphosphonates. Metal-Organic Frameworks. Synthesis and Characterization of Functional Nano-Objects. Applications from Catalysis to Gas Storage. 2015. 2011. Introduction: The Chemistry in Solution 171 MOFs Based on Iron, Chromium, or Vanadium Metal Phosphonates 172 Metal Carboxylates 174 Other Ligands 178 MOFs Based on Nb, Ru, Mo, and W 179 Synthesis at the Nanoscale 181 Properties 182 Flexible MOFs 182 Mechanical Properties 183 Analysis of Their Acidic Behavior 184 Stability Issues 185 Bioapplications of MOFs 186 Redox Properties 188 Catalytic Properties 189. Nanoarchitected Metal Phosphates and Phosphonates: A New Material Horizon toward Emerging Applications. Chemistry of Materials 2019,31 (15) , 5343-5362. <https://doi.org/10.1021/acs.chemmater.9b01742>. Pierre Thuery, Youssef Atoini, Jack Harrowfield. New Directions in Metal Phosphonate and Phosphinate Chemistry. Crystals 2019,9 (5) , 270. <https://doi.org/10.3390/cryst9050270>. Latif Ullah, Guoying Zhao, Niklas Hedin, Xunlei Ding, Suojiang Zhang, Xiaoqian Yao, Yi Nie, Yanqiang Zhang. Metal-organic frameworks in Germany: From synthesis to function. Coordination Chemistry Reviews 2019,380 , 378-418. <https://doi.org/10.1016/j.ccr.2018.10.002>. Subhajit Dutta, Aamod V. Desai, Partha Samanta, Sujit K. Ghosh.