

Magnetic behaviour of bimetallic layered phases $M'0.2Mn0.8PS3$ center dot $0.25 H_2O$ ($M' = Zn-II, Cu-II, Ni-II, Co-II$)

Por: [Fuentealba, P.](#) (Fuentealba, P.)^[1,2]; [Cortes, C.](#) (Cortes, C.)^[1,2]; [Manzur, J.](#) (Manzur, J.)^[3]; [Paredes-Garcia, V.](#) (Paredes-Garcia, V.)^[1,2,4]; [Venegas-Yazigi, D.](#) (Venegas-Yazigi, D.)^[2,5]; [Silva, IDA](#) (Silva, I. D. A.)^[6]; [de Santana, RC](#) (de Santana, R. C.)^[7]; [Magon, CJ](#) (Magon, C. J.)^[6]; [Spodine, E.](#) (Spodine, E.)^[1,2]

[Ver ResearcherID y ORCID](#)

DALTON TRANSACTIONS

Volumen: 46

Número: 41

Páginas: 14373-14381

DOI: 10.1039/c7dt03249h

Fecha de publicación: NOV 7 2017

Tipo de documento: Article

[Ver impacto de la revista](#)

Resumen

In this work the magnetic properties of bimetallic phases $M'0.2Mn0.8PS3$ center dot $0.25H_2O$ ($M' = Co-II, Ni-II, Cu-II$ or $Zn-II$) have been explored and compared with those of the pristine phase $MnPS3$. Magnetic susceptibility, high field magnetization and electron paramagnetic resonance (EPR) studies reveal that the transition temperature between the antiferromagnetic and paramagnetic order for the pristine phase is shifted to lower values in the bimetallic phases. From magnetization measurements the critical field of the spin-flop transition is found to be dependent on the nature of the added secondary transition metal ion. EPR spectra of all compounds in the temperature range of 8-300 K present a single resonance line shape. Temperature dependence of the EPR parameters, like line width, g values and double integrated area (I-DIN), are obtained from the spectra and present a scenario compatible with the magnetization results. The temperature dependence of the first derivative of the product (IDINT) shows two maxima for all samples, with exception of the $Co-II$ phase, indicating two critical temperatures, while these critical temperatures could not be clearly determined by dc susceptibility.

Palabras clave

KeyWords Plus: [X-RAY-DIFFRACTION](#); [ELECTRON-PARAMAGNETIC-RESONANCE](#); [ANTIFERROMAGNETIC-RESONANCE](#); [MACROCYCLIC COMPLEXES](#); [MPS3](#)
[M](#); [MNPS3](#); [TRANSITION](#); [COMPOSITES](#); [INTERCALATION](#); [NANOPARTICLES](#)

Información del autor

Dirección para petición de copias: Spodine, E (autor para petición de copias)

Univ Chille, Fac Ciencias Quim & Farmaceut, Santiago, Chile.

Dirección para petición de copias: Spodine, E (autor para petición de copias)

CEDENNA, Santiago, Chile.

Dirección para petición de copias: de Santana, RC (autor para petición de copias)

+ Univ Fed Goias, Inst Fis, Goiania, Go, Brazil.

Direcciones:

[1] Univ Chille, Fac Ciencias Quim & Farmaceut, Santiago, Chile

[2] CEDENNA, Santiago, Chile

+ [3] Univ Chile, Fac Ciencias Fis & Matamet, Santiago, Chile

+ [4] Univ Andres Bello, Dept Ciencias Quim, Santiago, Chile

+ [5] Univ Santiago Chile, Fac Quim & Biol, Santiago, Chile

+ [6] Univ Sao Paulo, Inst Fis Sao Carlos, Sao Carlos, SP, Brazil

+ [7] Univ Fed Goias, Inst Fis, Goiania, Go, Brazil

Direcciones de correo electrónico:ricosta.santana@gmail.com; espodine@uchile.cl

Financiación

Entidad financiadora	Número de concesión
Proyecto FONDECYT	1160106
Basal/CONICYT	FB0807
CONICYT - FONDEQUIP/PPMS/EQM	130086
FONDECYT from CONICYT	3170186 21160369
CeRTEV, Centre for Research, Technology and Education in Vitreous Materials	FAPESP 2013/07793-6
CNPq in Brazil	
FAPEG in Brazil	

[Ver texto de financiación](#)

Editorial

ROYAL SOC CHEMISTRY, THOMAS GRAHAM HOUSE, SCIENCE PARK, MILTON RD,
CAMBRIDGE CB4 0WF, CAMBS, ENGLAND

Información de la revista

- Impact Factor: [Journal Citation Reports](#)

Categorías / Clasificación

Áreas de investigación: Chemistry

Categorías de Web of Science: Chemistry, Inorganic & Nuclear

Información del documento

Idioma: English

Número de acceso: WOS:000413638400040

ID de PubMed: 29027554

ISSN: 1477-9226

eISSN: 1477-9234