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- B4I-P-TH-PS2-5** **Inclusion of transition metal cations into RhoZMOF structure**
Jose Antonio Villajos / Rey Juan Carlos University
GUILLERMO CALLEJA • CARMEN MARTOS • JUAN ÁNGEL BOTAS • GISELA ORCAJO
- B4I-P-TH-PS2-7** **New porous M4+ (Zr, Ti) based MOFs: from poly-carboxylate to naturally occurring -carboxyphenolate ligands**
Thomas de Vic / Institut Lavoisier, CNRS - Université de Versailles
FLORENCE RAGON • LUCY COOPER • LAURA PARDO • ANA LAGO • NATHALIE GUILLOU • CHARLOTTE MARTINEAU • CHRISTIAN SERRE • GUILLAUME CLET • ALEXANDRE VIMONT
- B4I-P-TH-PS2-8** **Covalent functionalization of carbon nanotubes with iridium-NHC complexes for catalysis applications**
Patricia Alvarez Rodriguez / Instituto Nacional de I Carbón, CSIC
MATIAS BLANCO • CLARA BLANCO • VICTORIA JIMENEZ • JAVIER FERNANDEZ TORNOS • JESUS PEREZ TORRENTE • LUIS ORO • ROSA MENENDEZ
- B4I-P-TH-PS2-9** **Thin films of acridine-based compounds grown by laser techniques**
Ileana Cristina Vasiliu / INOE 2000 - National Institute for Optoelectronics
ANDREEA MATEI • CATALIN CONSTANTINESCU • ION IONITA • MARIA MARINESCU • V. ION • MARIA DINESCU • MIHAI ELISA • RALUCA IORDANESCU • ANA EMANDI
- B4I-P-TH-PS2-10** **Uncovering the Elasticity of a Prototypical Imidazole-Based MOF Material: An Experimental and Computational Study**
Jin-Chong Tan / University of Oxford, UK
BARTOLOMEO CIVALLERI • CC LIN • LOREDANA VALENZANO • TONY CHEETHAM • THOMAS BENNETT • CAROLINE MELLOTT-DRAZNIKS • RAIMONDAS GALVELIS • CM ZICOVICH-WILSON
- B4I-P-TH-PS2-11** **Adsorption of N/S heterocycles in the flexible metal-organic framework MIL-53(FeIII) studied by in situ energy dispersive X-ray diffraction**
Ben Van de Voorde / Centre for Surface Chemistry and Catalysis, Katholieke Universiteit Leuven
ALEXIS S. MUNN • NATHALIE GUILLOU • FRANCK MILLANGE • DIRK DE VOS • RICHARD I. WALTON
- B4I-P-TH-PS2-12** **CO2 adsorption on Mixed Ligand Zr-MOFs**
Jayashree Ethiraj / University of Torino
SACHIN CHAVAN • FRANCESCA BONINO • JENNY G. VITILLO • STIAN SVELLE • KARL PETTER LILLERUD • SILVIA BORDIGA
- B4I-P-TH-PS2-13** **Kinetic study of the thermal decomposition of the diethanolamine (DEA) free and incorporated in solid matrices of mesoporous ordered silica**
Simone Avila / Instituto de Química-USP
JIVALDO MATOS
- B4I-P-TH-PS2-14** **MOFs for the capture and catalytic decomposition of warfare agents**
Elena López-Maya / Universidad de Granada. Departamento de Química Inorgánica
- B4I-P-TH-PS2-15** **Isorecticular metal-organic framework series based on Ni8-hydroxo clusters and pyrazolate ligands: control of hydrophobicity**
Elsa Quartapelle Procopio / Universidad de Granada. Granada, Spain
NATALIA MUÑOZ • CARMEN MONTORO CANO • ELENA LÓPEZ MAYA • ENRIQUE OLTRA • VALENTINA COLOMBO • NORBERTO MASCIOCCHI • STEFAN KASKEL • ELISA BAREA MARTÍNEZ • JORGE RODRÍGUEZ NAVARRO
- B4I-P-TH-PS2-16** **Photocatalytic behavior of phosphonate-based hybrid materials on dyes and phenols degradation**
Antonia Montserrat Bazaga Garcia / de partamento de Química Inorgánica
ROSARIO MERCEDES PEREZ COLODRERO • PASCUAL OLIVERA PASTOR • ISABEL SANTACRUZ MUÑOZ • AURELIO CABEZA DIAZ • MIGUEL ÁNGEL GARCÍA ARANDA
- B4I-P-TH-PS2-17** **Investigating the structural changes of Sc-based metal-organic frameworks upon adsorption of different guest molecules**
Jorge Sotelo / University of Edinburgh
SCOTT MCKELLAR • STEPHEN MOGGACH • JOHN MOWAT • PAUL WRIGHT
- B4I-P-TH-PS2-18** **Luminescent mechanochromic and thermochromic materials based on copper iodide clusters**
Sandrine Perruchas / Laboratoire PMC - CNRS UMR 7643
QUENTIN BENITO • XAVIER LEGOFF • ALAIN GARCIA • THIERRY GACCOIN • JEAN-PIERRE BOILOT
- B4I-P-TH-PS2-19** **Molecular Simulations for separation of carbon dioxide in Room Temperature Ionic Liquid/ Metal-Organic Frameworks Composite**
Jose Manuel Vicent-Luna / University Pablo de Olavide
JUAN JOSE GUTIÉRREZ-SEVILLANO • JUAN ANTONIO ANTA • SOFÍA CALERO
- B4I-P-TH-PS2-20** **Dielectric properties of Co-MOF74**
Claudia Gómez-Aguirre / Universidad de A Coruña
SUSANA YÁÑEZ-VILAR • BREOGÁN PATO-DOLDÁN • MANUEL SÁNCHEZ-ANDÚJAR • SOCORRO CASTRO-GARCÍA • MARIA-ANTONIA SEÑARÍS-RODRÍGUEZ

Photocatalytic behavior of phosphonate-based hybrid materials on dyes and phenols degradation

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There is increasing interest in using heterogeneous catalysis for mineralization of organic pollutants. Within Advanced Oxidation Processes (AOPs), Photo-Fenton reaction is one of the most efficient methodologies. To date, most of heterogeneous iron catalysts studied was based on oxides or hydroxides. We extend here our previous studies on phenol photodegradation [1] by exploring the photocatalytic activity of various hybrid M^{II} phosphonates ($M^{II} = Mn, Fe, Cu$) for several organic pollutants. Synthesis conditions, pre-activation, H_2O_2 concentration, and surface characteristic have been studied/optimized. For dyes, decolouring and mineralization degrees up to 90% and 45%, respectively, were attained. Chemical analysis and X-ray photoelectron spectroscopy revealed the dynamic character of the photocatalyst surface upon reaction.

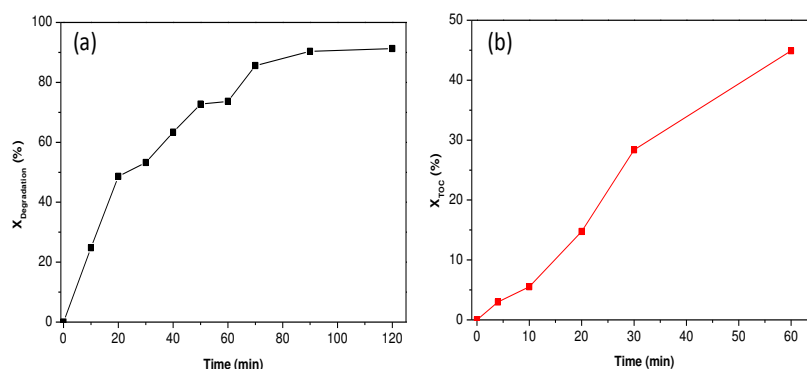


Figure 1. (a) Degradation degrees of orange methyl; (b) Mineralization degrees of orange methyl.

References

- [1] Bazaga-García M.; Cabeza A.; Olivera-Pastor P.; Santacruz I.; P. Colodrero R. M.; G. Aranda M. A. J. Phys. Chem. C. **2012**, 116, 14526–14533.