



# Adam Mickiewicz University in Poznań

## Faculty of Chemistry

*HighChem - interdyscyplinarne i międzynarodowe studia doktoranckie z elementami wsparcia współpracy międzysektorowej*

### Metal-Organic Frameworks for gas and liquid phase adsorption processes

Prof. dr Joaquin Silvestre-Albero (University of Alicante)

#### Courses in chemistry or related disciplines

<b>Field of science</b>	chemistry
<b>Teaching method</b>	lecture
<b>Language</b>	English
<b>ECTS credits</b>	1
<b>Numbers of hours</b>	14
<b>Aims of the course</b>	Gain knowledge about the synthesis, characterization and application of nanoporous solids, preferentially activated carbon materials and metal-organic frameworks
<b>Course contents</b>	-Synthesis of nanoporous materials -Characterization of the porous structure and surface chemistry -Application of nanoporous solids in gas adsorption -Application of nanoporous solids in liquid-phase processes
<b>Prerequisites and co-requisites</b>	Basic knowledge about materials science and interfaces
<b>Learning outcomes</b>	
<b>On completion of the course PhD candidates will be able to:</b>	<b>Assessment mode</b>
-Identify the main characteristics of the most representative nanoporous solids, identify the most useful methods to complete their physicochemical characterization, to understand their performance in a number of adsorption processes in both gas a liquid phase and to establish proper structure-property relationships	Exam
<b>Literature</b>	-Synthesis of metal-organic frameworks (MOFs): Routes to various MOF topologies, morphologies, and composites, Chem. Rev. 2012, 112, 933. -Flexible metal-organic frameworks, Chem. Soc. Rev. 2014, 43, 6062. -Activated carbon, Elsevier, 2012. -The chemistry and applications of metal-organic frameworks, Science 2013, 341, 6149. -Ultrahigh porosity in metal-organic frameworks, Science 2010, 329, 424.
<b>Additional information</b>	Schedule: June 6, 2022 at 10-12.00; 13.30-15.00 June 7 at 10-12.00; 13.30-15.00

The course realized within the project number POWR.03.02.00-00-1023/17 co-financed under the Operational Program Knowledge Education Development of priority axis III: Higher education for economy and development, activities: 3.2 PhD studies



**European  
Funds**  
Knowledge Education Development



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June 8 at 10.00-12.00; 13.30-15.00

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