

20/01/2021**TEACHING ACTIVITY FOR PhD COURSES IN INDUSTRIAL CHEMISTRY, A.A. 2020-2021****COORDINATOR Prof.ssa Dominique Marie Roberto**

	Title	Date	Hour	Room	CFU
Coordinator: Benaglia Maurizio Lecturers: Benaglia Maurizio Pirola Carlo Proserpio Davide	Literature and library research in industrial chemistry Course on the literature in industrial chemistry. The student learns to read and comment in a critical manner articles in the field of industrial chemistry, in particular in organic (with Prof. Benaglia), inorganic (with Prof. Proserpio) and physical chemistry (with Prof. Pirola).	Date to be decided with the professors			2
Coordinator: Rondinini Sandra Lecturers: Rondinini Sandra Vertova Alberto Minguzzi Alessandro Marken Frank	Electrochemical Technologies for the energy and the environment Fundamental aspects and investigatio techniques for energy conversion and storage	March 2021			2
Coordinator: Rossetti Ilenia Lecturers: Rossetti Ilenia Professor to be defined	Processes for sustainable chemistry and biorefinery The course introduces the concept of biorefinery as ensemble of integrated processes for the valorisation of renewable raw materials. The students will learn the logic organization of a biorefinery and the criteria for its economic, logistic and environmental sustainability. The course will provide examples from the literature base mainly on the production and use of bioethanol, biooil and biogas.	April 2021			2

<p>Coordinator: Ranucci Elisabetta</p> <p>Lecturers:</p> <p>Alongi Jenny</p> <p>Vicini Silvia</p> <p>Salvini Antonella</p> <p>Cocca Maria Cristina</p>	<p>Polymers for the conservation of cultural heritage</p> <p>Cultural heritage is exposed to many factors of deterioration that cause damage and decay of the constituent materials, be they stone or polymeric ones. Possible deterioration factors are, for example, fluctuations in relative humidity, changes in temperature, light density, air pollution, biological damage and uncontrolled storage and exposure environments.</p> <p>The application of polymers, or polymeric nanocomposites, can preserve deteriorated artifacts by consolidating their structure and morphology within a network of polymeric molecules.</p> <p>At the same time, polymeric materials are taking on an important role in the recovery of obsolete surface restorations.</p> <p>The objective of this course is to understand the physical and chemical interactions between the materials of which the typical artefacts of our cultural heritage are made, the environment and the latest polymer-based consolidation systems and understand the extent of their effects on conservation. of the same over the long period of time.</p>	<p>April 2021</p>			<p>2</p>
<p>Coordinator: Carlucci Lucia</p> <p>Lecturers:</p> <p>Taddei Marco</p> <p>Professor to be defined</p> <p>Professor to be defined</p> <p>Professor to be defined</p> <p>Professor to be defined</p>	<p>Materials and methods for CO₂ removal</p> <p>The reduction of CO₂ emissions is crucial to address global warming and climate change. To reach these targets scientists are intensively involved in developing new Carbon Capture, Utilization and Storage (CCUS) methodologies. The course aims to give an overview of the problem focussing on adsorption and absorption methods by MOFs and amine- based materials. Some aspects concerning the catalytic transformation of CO₂ will be also covered.</p>	<p>May 2021</p>			<p>2</p>

<p>Coordinator: Cauteruccio Silvia</p> <p>Lecturers:</p> <p>Montenegro Garcia Javier</p> <p>Vargas Jentzsch Andrea</p> <p>Fin Andrea</p>	<p>Organic chemistry applied to biological systems and smart materials</p> <p>Study of innovative methodologies in organic chemistry, especially in supramolecular chemistry, for the development of smart materials and advanced organic systems in chemical biology.</p>	<p>May 2021</p>			<p>2</p>
<p>Coordinator: Caselli Alessandro</p> <p>Lecturers:</p> <p>Caselli Alessandro</p> <p>Garcia-Espana Enrique</p>	<p>Catalysis for the development of sustainable technologies: green conversion of waste materials</p> <p>The course aims to train students on the importance of catalysis for the sustainable production of chemicals from waste materials, focused primarily on the state-of-the-art catalysts and catalytic processes expected to play a decisive role in the "green" production of chemicals in the next future. Particular emphasis will be given to waste CO₂ to be turned into ingredients for fuels, plastics, pharmaceuticals and even food. Finally, an expert in the field will cover the environmental control through supramolecular complexation.</p>	<p>May 2021</p>			<p>2</p>
<p>Coordinator: Roberto Dominique</p> <p>Lecturers:</p> <p>Ghezzi Laura (12 h)</p>	<p>Graphic Communication of Scientific Research to elevate your Papers</p>	<p>a) 03 June 2021</p> <p>b) 04 June 2021</p> <p>c) 07 June 2021</p>	<p>9:00 - 13:00</p> <p>9:00 -13:00</p> <p>9:00 - 13:00</p>		<p>2</p>
<p>Coordinator: Roberto Dominique</p> <p>Lecturers:</p> <p>Fondazione Sodalitas (20h)</p> <p>For third year PhD students in Chemistry and in Industrial Chemistry.</p> <p>Recommended</p>	<p>Giovani e Impresa</p> <p>Course for third-year PhD students. It is an orientation course with exercises and laboratory activities, designed and organized by the Sodalitas Foundation. The course is based on the centrality of the person; it is oriented in the perspective of Social Responsibility and Sustainability, according to the European guidelines of MIUR, with the aim of enhancing vocations and attitudes that distinguish the excellence of young people, as an added value of cross-skills. The method is based on a guided path of progressive experience in the logic of the world of work, through interactive, laboratory, relational modes, support films, company testimony and simulations.</p>	<p>June 2021</p>			<p>4</p>