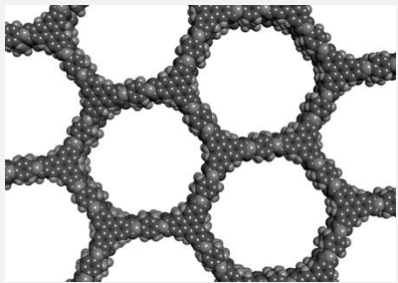




<i>Project Title:</i>	<i>Synthesis and Functionalization of Covalent Organic Frameworks</i>
<i>Project Short description</i>	<p>Covalent organic frameworks (COFs), 2- or 3-dimensional networks formed by the self-assembly of purely organic building blocks, are highly attractive materials due to their high surface area, controllable pore size, and low density. Some of the potential applications for this new class of crystalline materials are catalysis, molecular recognition, and gas capture. In order to widen the scope, having access to methods for pore surface functionalization is of high interest.</p> <p>COFs are constructed by reticular synthesis of rigid building blocks that retain their structure during the COF synthesis, and thus the building block geometry determines the structure and dimensions of the pores. The reaction conditions for COF formation are very sensitive to steric hindrance, and therefore the introduction of functional groups prior to the framework formation is limited. This can be circumvented using post-synthetic modification with building blocks bearing compact reacting groups, which can be functionalized after the COF formation.</p> <p>The aim of this project is the synthesis of building blocks and the subsequent preparation of COFs incorporating reactive groups, which can be modified post-synthetically to gain access to novel materials bearing different pore surfaces.</p> 
<i>Expected Start/end date</i>	
<i>Required degree and Background knowledge of students, minimum grade point average, etc...</i>	The applicant should have a Bachelor's degree in Chemistry and experience in synthesis, standard purification procedures, and characterization methods of organic compounds. In addition, a good knowledge of English is required.

Supervisor at INL

Name:	Laura Salonen, Carlos Rodriguez-Abreu
Position:	Research Fellow, Staff Researcher
email:	laura.salonen@inl.int, carlos.rodriiguez@inl.int