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SmartMatLab center: From molecules to devices-organic and organometallic materials in optoelectronics

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Research in functional materials is driven by the needs of make informed choices in the quest for better and more effective systems. Optoelectronics technologies hold a great deal of interest for the academic research as well as for the Industrial R&D and market sectors. R&D opportunities in optoelectronics span the areas of performance improvements, cost reduction, high volume manufacturing and energy and environment sustainability. One of the main issues in material science development is often the lack of a fully integrated process that starts from the “molecule in the lab” and reach the “operating device”. SmartMatLab (SML) Center is designed to fill this missing link between chemistry done at ISTM - University and the prototyping step. SML Center mission is to allow for the screening and the consequent choice of the most suitable candidates for future engineering development. We will present some of the research on going at ISTM, particularly focusing on those related to organic and organometallic molecular frameworks suitable to be implemented as active dyes in organic photovoltaics and OLEDs. Together we are going to illustrate the facilities present in SML labs.