

**The Department of Chemistry invites all its students and academic staff to the
weekly colloquium lecture**

Wednesday, 14/6/21, 11:00 a.m.

The Alchemy of Vacuum - Hybridizing Light and Matter -

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Abstract

Light-matter interactions are not only fundamental for the existence of life, such as we know it, but play a key role in our culture, in the exchange of information and in many tools from surgery to the making of cars. What is perhaps more surprising, is that light-matter interactions occur even in total darkness. This is because vacuum, the three-dimensional space in which we exist, is not a void but is full of quantum fluctuations, including electromagnetic fluctuations which affect for instance the forces between molecules. When such light-interactions become strong enough, a new regime arises characterized by the formation of hybrid light-matter states. This is the so-called strong coupling regime which leads to fundamental changes in material properties. After introducing some of the basic concepts, examples of modified material properties such as chemical reactivity and conductivity will be presented.

will be held on zoom:

<https://zoom.us/j/92791768883?pwd=OGZwNUpmaUE2Z2hWL2JmNnVFdVq4Zz09>

Looking forward to seeing you!