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"Hitting two birds with one stone: Ruthenium sensitizers for energy conversion and biologically-related applications"

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Αίθουσα σεμιναρίων στο ισόγειο του ΕΙΕ

Hitting two birds with one stone: Ruthenium sensitizers for energy conversion and biologically-related applications

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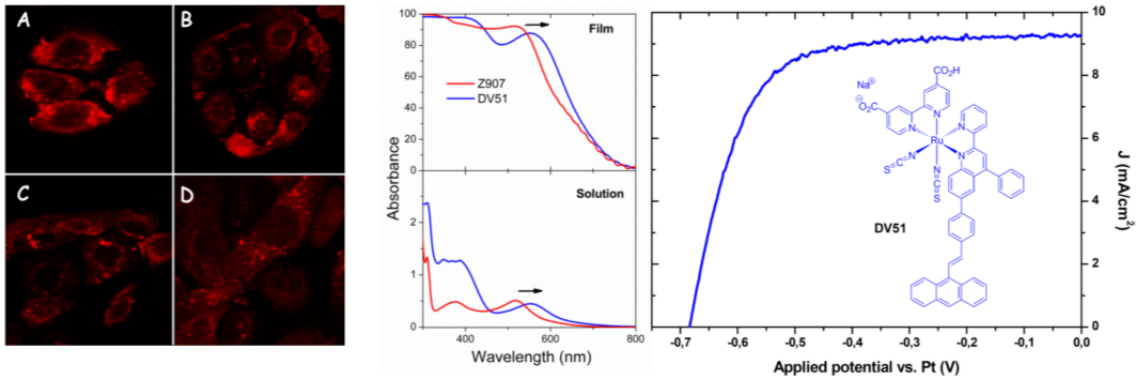
In the past few decades, transition-metal complexes have attracted intense scientific interest. Besides their catalytic [1] and energy-converting potential, for example in dye-sensitized solar cells applications [2], this is due to their ability to be introduced in health-related applications such as photodynamic therapy (PDT) [3].

Dye-sensitized solar cells (DSCs) provide an appealing alternative to the conventional solid-state cells. This is mainly due to their ability to work indoors and under subdued light conditions, their potential transparency and flexibility, their invariant efficiency to the operating temperature, and their relatively low production cost [2]. Photodynamic therapy (PDT) [3] is a light-triggered, non-surgical protocol for the treatment of various malignant cancers including lung, cervical, bladder, oesophagus, and skin, as well as of age-related macular degeneration. Moreover, photodynamic therapy has been applied in killing microbial cells including bacteria, fungi, and viruses.

The talk deals with the synthesis, characterization, and applications of a variety of tailor-designed organic ligands and the corresponding ruthenium-based photosensitizers. The lecture will begin with a quick overview of the dye-sensitized solar cells and photodynamic therapy fields, followed by an in-depth discussion on the applications of the newly-synthesized molecular photosensitizers in these fields [4-8].



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