

Proposal Acronym	Photo-sensors
Proposal Title:	Elastic composite photo-sensors and photovoltaics made of conductive polymer composites and mixed valence inorganic fillers
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Research area:	Chemistry CHE
Sub-discipline of research area:	Materials for sensors New materials
Category of research:	developmental
Keywords:	elastic sandwich polymer composites, photo-sensors, photovoltaics, p- and n- conductive polymers, polyaniline, polypyrrole, mixed valent inorganic filler,
Abstract:	<p>We aim to synthesize electrochemically elastic polymer composite photo-sensors and/or photovoltaics made of polyaniline (n-type) and/or polypyrrole (p-type) and mixed valence chalcogenide halides of indium $\text{In}_5\text{Ch}_5\text{X}$ (Ch = S, Se; X = Cl, Br). The later serving as fillers, possess distinguishable photo-sensitivity and thermoelectricity. The overall photo-sensorial efficiency optimisation of the composites will be tuned by varying the elemental composition of the inorganic filler, due to the employment of mixed crystals, as well as by diverse p- and n-doping strategies. The physico-chemical characterization of the polymer-inorganic filler interaction will occur by in-situ/ex-situ voltammetric, FT-IR, SEM-EDX and ellipsometric measurements, meanwhile their photo-sensorial and photovoltaic activity upon different applied bias and different illumination regimes will be assessed by a potentiostat coupled to IVIUM Modulight-module, suitable for photo-sensorial/photovoltaic characterizations.</p>
Does this proposal possess any of the sensitive ethical issues detailed in ethical issues table?:	No