



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Cláudia Pereira

Type (Academic or Industrial): Academic

Country: Portugal

Leadership position in the COST: Participant on CA18224

Working Group in which you are involved: Work Group 3

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Laboratory/Company:

CHARM-Cultural Heritage and Responsive Materials

Laboratory/Company info

The research group is focused on the design of molecules and materials able to respond to external stimuli and to contribute to the sustainable conservation of Cultural Heritage.

The interdisciplinary environment conveys an integrated approach, in which top-notch materials and techniques are applied in the development of enduring materials. Photochemistry, physical chemistry, and the principles of supramolecular chemistry are applied to (i) study photo, electro, and thermal-induced reactions in responsive materials; (ii) preserve materials incorporated in Cultural Heritage objects, which requires research to determine their original chemical and physical state and to identify agents and mechanisms of change and degradation; and (iii) identify complex aged materials and to address questions of context and meaning in their use, as well as the impact of previous and contemporary interventions.

Link to the home page of the Laboratory/Company:

<https://laqv.requimte.pt/research/research-groups/112-cultural-heritage-and-responsive-materials>

Fields of expertise (limited to 400 characters):

- Inorganic Chemistry
- Lanthanides
- Thermal Sensors
- Dye sensitized Solar Cells
- Light Harvesting

5 Main publications or patents:

- Influence of the meso-substituents of zinc porphyrins in dye-sensitized solar cell efficiency with improved performance under short periods of white light illumination
Dyes and Pigments, 2020, DOI: 10.1016/j.dyepig.2020.108280
- Dye-sensitized solar cells using fluorone-based ionic liquids with improved cell efficiency, Sustainable Energy & Fuels, 2019, DOI: 10.1039/C9SE00783K
- Impact on CO₂/N₂ and CO₂/CH₄ separation performance using Cu-BTC with supported ionic liquids-based mixed matrix membranes, Membranes, 2018, DOI: 10.3390/membranes8040093
- Carbon Dioxide as Building Block in the Synthesis of the Anti-Infective Agent Hexamine, ChemistrySelect, 2018, DOI: 10.1002/slct.201801567



- Membranes with a low loading of Metal-Organic Framework-Supported Ionic Liquids for CO₂ /N₂ separation in CO₂ capture, Energy Technology, 2017 DOI: 10.1002/ente.201700228

Collaborations:

Dr. Filipe Paz,
Prof. João Paulo Tomé
Dr. João Paulo Leal
Dr. Bernardo Monteiro

Facilities:

- Full equipped laboratory for Solar Cell devices preparation and performance evaluation
- Two laboratories for material processing and synthesis
- Two laboratories for photophysics and photochemistry research