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## Ionizing radiation induced functionalization of polymeric materials



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Radiation processing techniques are based on the physical interaction of radiation with matter which is capable of promoting specific chemical reactions. In particular, gamma irradiation, a clean and environmental friendly technology (as there is no need of solvents, initiators or high temperatures, leading to any residues) has been successfully applied over the years in the preparation/modification of polymers. By suiting the experimental conditions like irradiation method, dose rate, irradiation atmosphere, samples' absorbed dose, reactants' concentration, etc., it is possible to functionalize polymeric based materials, tailor its properties and adequate them to different applications (mainly through polymerization, crosslinking and/or grafting reactions). In this presentation, the methodology that our team have been carrying out on the development/functionalization of chitosan based matrices and PVA based membranes respectively for biomedical applications (wound dressings) and for catalysis (polymeric catalytic membrane reactors for biodiesel production), using gamma-radiation as a modifying tool will be highlighted. Relevant results will be presented.

### Biography

Maria Helena Casimiro has completed her PhD in Chemistry from Lisbon University. Her work has been focused on the functionalization of macromolecules (polymeric and hybrid materials) tailored for applications on biomedical, environmental, and conservation and restoration areas, using gamma-radiation as a modifying tool. She has been involved in national and international projects, students' supervision, worked as Reviewer for journals of international circulation and co-organized science promotion activities.

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