

Organic Chemistry for the Environment and Health

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We pursue two lines of research:

1. *Non-thermal (alias non-equilibrium) plasmas as a novel means to induce chemical processes of interest for the environment, energy and agrifood applications*
 - advanced oxidation for air and water remediation
 - CO₂ conversion
 - conservative treatment of fresh food and stimulation of algal growth
2. Design and synthesis of mitochondria-targeted small molecules to report on or to affect mitochondrial function and dysfunction.
 - *Complete mineralization of organic pollutants in water by treatment with air non-thermal plasma*, Chem. Eng. J., doi.org/10.1016/j.cej.2017.12.107
 - *Oxidation of clofibric acid in aqueous solution using a non-thermal plasma discharge or gamma radiation*, Chemosphere, **2017**, 187, 395-403.
 - *Investigation on plasma-driven methane dry reforming in a self-triggered spark reactor*, Plasma Process. Polym., **2015**, 12, 808-816.
 - *Direct pharmacological targeting of a mitochondrial ion channel selectively kills tumor cells in vivo*, Cancer Cell, **2017**, 31, 516-531.
 - *Novel lipid-mimetic prodrugs delivering active compounds to adipose tissue*. Eur. J. Med. Chem., **2017**, 135, 77-88.