Electrocatalysis and Applied Electrochemistry (EAEG)

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The research group applies electrochemical methods to study chemical problems in various fields such as electrochemical surface treatment, (electro)catalysis, and environmental electrochemistry. The research activity is centered in molecular electrochemistry with particular attention to the study of mechanisms of electrochemical processes, the development of eco-friendly electrosynthesis and electrocatalytic materials and/or electrocatalytic processes. The main topics of research activity of the group are:

- Development of electrocatalytic materials
- Electrochemical activation of small molecules
- Electrochemical approaches to controlled radical polymerization
- Electrochemical surface treatment (electropolishing, electrodeposition)
- Investigation on the electrochemical properties of active masses of lead-acid batteries

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2. Lorandi, F.; Fantin, M.; Wang, Y.; Isse, A.A.; Gennaro, A.; Matyjaszewski, K. Atom transfer radical polymerization of acrylic and methacrylic acids: preparation of acidic polymers with various architectures, *ACS Macro Letters*, **2020**, 9, 693-699.
3. Mazzucato, M.; Daniel, G.; Mehmood, A.; Kosmala, T.; Granozzi, G.; Kucernak, A.; Durante, C. Effects of the induced micro- and mesoporosity on the single site density and turn over frequency of Fe-N-C carbon electrodes for the oxygen reduction reaction. *Appl. Catal. B Environ.* **2021**, *291*, 120068–120083.
4. Grecchi, S.; Arnaboldi, S.; Isse, A.A.; D'Aloi, C.; Gennaro, A.; Mussini, P.R. Electrocatalytic reduction of bromothiophenes vs bromobenzenes on gold and silver electrodes: enhancement from S specific adsorption and modulation from substituent effects, *Electrochim. Acta*, **2022**, *403*, 139563.