



MARIE SKŁODOWSKA-CURIE POSTDOCTORAL FELLOWSHIPS 2021

EXPRESSION OF INTEREST FOR HOSTING MARIE CURIE FELLOWS

HOST INSTITUTION

NOVA University of Lisbon | School of Science and Technology

RESEARCH GROUP AND URL

LAQV – REQUIMTE
<https://laqv.requimte.pt/>

SUPERVISOR (NAME AND E-MAIL)

Sónia A.C. Carabineiro
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SHORT CV OF THE SUPERVISOR

Sónia Carabineiro is an Assistant Professor at the Nova University of Lisbon since 2020. She is (co-)author more than 20 chapters in books, more than 170 articles in international scientific journals, more than 200 communications to national and international conferences, more than 15 invited talks and 1 worldwide patent. She is evaluator of several international project proposals (including European Research Council grants). She has more than 5200 citations and a h index of 41 (Web of Science). She is a regular referee of several international journals, being currently one of the top female reviewers in the world (Publons Clarivate). She is also a member of the Editorial Boards of several journals (like ChemCatChem, Wiley) and evaluator of projects, including ERC grants. She is in the list of the worldwide most cited scientists (top 2% of Chemistry) published by Stanford University in 2020. Her research interests deal with catalysts by gold nanoparticles, single and mixed metal oxides, nanostructured carbon materials (including carbon nanotubes and graphene), heterogenization of homogenous complexes, gas and liquid phase oxidations and environmental catalysis.

5 SELECTED PUBLICATIONS

- M. Sutradhar, M.A. Andrade, S.A.C. Carabineiro, L.M.D.R.S. Martins, M.F.C. Guedes da Silva, A.J.L. Pombeiro (2021), "Oxido- and Dioxido-Vanadium(V) Complexes Supported on Carbon Materials: Reusable Catalysts for the Oxidation of Cyclohexane", *Nanomaterials* (MDPI), 11, 1456 (20 pages) (DOI: 10.3390/nano11061456).
- E. Kolobova, E. Pakrieva, S.A.C. Carabineiro, N. Bogdanchikova, A.N. Kharlanov, S.O. Kazantsev, J. Hemming, P. Mäki-Arvela, A. Pestyakov, D.Y. Murzin (2019), "Oxidation of a wood extractive betulin to biologically active oxo-derivatives using supported gold catalysts", *Green Chemistry* (Royal Society of Chemistry), 21, 3370-3382 (DOI: 10.1039/C9GC00949C).
- S. Tšupova, A. Cadu, S.A.C. Carabineiro, M. Rudolph, A.S.K. Hashmi (2017), "Solid-supported nitrogen acyclic carbene (SNAC) complexes of gold: preparation and catalytic activity", *Journal of Catalysis* (Elsevier), 350, 97-102 (DOI: <https://doi.org/10.1016/j.jcat.2017.03.013>).
- Vourros, V. Kyriakou, I. Garagounis, S.A.C. Carabineiro, F.J. Maldonado-Hódar, G.E. Marnellos, M. Konsolakis (2017), "Carbon Dioxide Hydrogenation to Methanol over Supported Au nanoparticles: Effect of the support", *Journal of CO₂ Utilization* (Elsevier), 19, 247-256 (DOI: 10.1016/j.jcou.2017.04.005)
- P. Pérez, M.A. Soria, S.A.C. Carabineiro, F.J. Maldonado-Hódar, A. Mendes, L.M. Madeira (2016), "Application of Au/TiO₂ catalysts in the low-temperature Water-Gas Shift reaction", *International Journal of Hydrogen Energy* (Elsevier), 41 (8), 4670-4681 (DOI: 10.1016/j.ijhydene.2016.01.037).



PROJECT TITLE AND SHORT DESCRIPTION

Supported metal nanoparticles and heterogenized complexes for reactions of industrial importance

We aim to immobilize homogeneous (soluble) complexes of Au and several metals on solid supports (carbon materials or metal oxides) and use them as catalysts for reactions of industrial importance, such as oxidation of alcohols and hydrocarbons, CO₂ abatement, in the mildest and “greenest” possible conditions. Supported nanoparticles (of Au and other metals) will also be used for comparison.

SCIENTIFIC AREA WHERE THE PROJECT FITS BEST*

Chemistry (CHE)