



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Leonarda F. Liotta

Type (Academic or Industrial): Public Research Institute

Country: Italy

Leadership position in the COST: MC member for CA 18244; MC member for CA 17136 (Indoor Air Pollution Network).

Working Group in which you are involved: WG1 and WG3

E-mail:leonardafrancesca.liotta@cnr.it

Laboratory/Company: Institute for the Study of Nanostructured Materials (ISMN) that is part of the National Research Council of Italy (CNR)

Laboratory/Company info: ISMN is a CNR research institute internationally renowned for its multidisciplinary activities in the field of nanostructured materials and enabling processes and technologies. The institute has three different research units in Italy, in Bologna, Roma and Palermo. The unit of Palermo (15 researchers, 6 technical and administrative staff, 2-4 PhD students, 2 postdoctoral fellows) where I work is mainly devoted to the development of nanomaterials for application in environmental catalysis, green chemistry waste recycle and energy production.

Link to the home page of the Laboratory/Company:

<http://www.ismn.cnr.it/index.php?lang=en>

Fields of expertise:

- Indoor and outdoor catalytic pollution abatement: VOCs, CH₄ and soot oxidation, NO SCR with HC or NH₃.
- CO₂ catalytic conversion into CH₄ (Sabatier reaction)
- Biogas conversion to syngas (methane dry reforming)
- Investigation of cathodic and electrolyte materials for Solid oxide fuel cells
- Biomass conversion in biodiesel thorough transesterification reactions of lipids catalysed by heterogeneous acid catalysts

5 Main publications or patents:

- Grabchenko, M.V., Mamontov, G.V., Zaikovskii, V.I., La Parola, V., Liotta, L.F., Vodyankina, O.V. The role of metal–support interaction in Ag/CeO₂ catalysts for CO and soot oxidation (2020) Applied Catalysis B: Environmental, 260, Article number 118148;
- Testa, M.L., Parola, V.L., Mesrar, F., Ouanji, F., Kacimi, M., Ziyad, M., Liotta, L.F. Use of zirconium phosphate-sulphate as acid catalyst for synthesis of glycerol-based fuel additives (2019) Catalysts, 9 (2), art. no. 148;
- Rochard, G., Giraudon, J.-M., Liotta, L.F., La Parola, V., Lamonier, J.-F. Au/Co promoted CeO₂ catalysts for formaldehyde total oxidation at ambient temperature: Role of oxygen vacancies (2019) Catalysis Science and Technology, 9 (12), pp. 3203-3213.



- Mesrar, F., Kacimi, M., Liotta, L.F., Puleo, F., Ziyad, M. Syngas production from dry reforming of methane over ni/perlite catalysts: Effect of zirconia and ceria impregnation (2018) International Journal of Hydrogen Energy, 43 (36), pp. 17142-17155;
- Aliotta, C., Liotta, L.F., Deganello, F., La Parola, V., Martorana, A. Direct methane oxidation on $\text{La}_{1-x}\text{Sr}_x\text{Cr}_{1-y}\text{Fe}_y\text{O}_{3-\delta}$ perovskite-type oxides as potential anode for intermediate temperature solid oxide fuel cells (2016) Applied Catalysis B: Environmental, 180, pp. 424-433.

Collaborations: Prof. Anne Giroir-Fendler, University of Lyon 1, Lyon. Prof. Patrick Da Costa, Sorbonne University, Paris; Prof. Jean-Francois Lamonier, University of Lille; Prof. Renaud Cousin, University of Littoral, Côte d'Opale, Dunkerque, France. Prof. Olga Vodyankina, University of Tomsk, Tomsk, Russia. Prof. Tatyana Tabakova, Institute of Catalysis, Bulgarian Academy of Sciences, Sofia, Bulgaria. Dr. Anita Horvath, Hungarian Academy of Sciences, Budapest, Hungary. Prof. Mohamed Kacimi, University Mohamed V, Rabat, Morocco. Prof. Sami Boufi, University of Sfax, Sfax, Tunisia. Dr. Alessandro Longo, ESRF - The European Synchrotron, Grenoble, France.

Facilities:

- Bruker D 5000 diffractometer
- ASAP 2020 Plus Micromeritics (BET/porosimetry)
- TGA/DSC1 STAR system (Mettler Toledo)
- Micromeritics Autochem 2910 and 2950 HP
- X-ray photoelectron spectrometer (XPS) VGMicrotech ESCA 3000Multilab, equipped with a dual Mg/Al anode
- Experimental setup for gas/solid reactions/equipped with quartz reactors/GC, QM, IR/UV analysers.