CV FRANCIA CARLOTTA (POLITECNICO di TORINO)

1.PERSONAL DATA

Carlotta Francia, born in (Italy) on .1971. Graduated in Chemistry, PhD in Material Science and Technology, Professor of Chemistry at the Department of Applied Science and Technology, Politecnico di Torino.

2.RESEARCH CAREER

The research activities are addressed to electrochemistry and electrochemical power sources, with particular attention to the structural and electrochemical characterization of electrodes for batteries and fuel cells. The research activity has been mainly related to European and National funded projects. For this reason, most attention has been directed to find practical solutions that allow better performing systems in the field of power sources. Furthermore, the involvement in several projects allowed her to be in contact and collaborate with different realities, such as foreign Universities, Research Centres and Industries, having relationships and exchange of information, which were very fruitful for her research activities. Partner of EU projects:

H2020 NMP-GV-2014 NMP-17-2014 Advanced Lithium Sulphur battery for xEV ALISE (GA 666157) (**Scientific Responsible of Politecnico Unit**)
- FP7-NMP-2012-1: STABLE STable high-capacity lithium-Air Batteries with Long cycle life for Electric cars GA n 314508 – (**Participant and WP2 leader**)
- H2020 GV-2014 GV-1-2014 eCAIMAN Electrolyte, Cathode and Anode Improvements for Market-near Next-generation Lithium Ion Batteries GA 653331 (**Participant**)
- FP7 GC.NMP.2013-1 2013-2017 MARS EV - Materials for Ageing Resistant Li-ion High Energy Storage for the Electric Vehicle GA 609201 (**Participant**)
- FP7 EeB 2013-2017 RESSEPEE –REtrofitting Solutions and Services for the enhancement of Energy Efficiency in Public Edification " Grant agreement no: 609377 – (**Participant**)
- FP7-ICT-2009-5: SMARTEC Smart electrochromic active matrix components for stand-alone multifunctional devices (GA 258203) (**Participant**)
- FP7/2011-14: DURAMET for the Fuel Cells and Hydrogen Joint Technology Initiative (G.A. 278054) (**Participant**)
- PRIN 2013-2016 2010CYTWAW_008 Membrane nanocomposite avanzate ed elettrocatalizzatori innovativi per celle a combustibile ad elettrolita polimerico a lunga durata, NAMED-PEM (**Participant**)
- PRIN 2002 2002095838_004 Elettrodi tridimensionali innovativi per processi di ossidazione di inquinanti organici bio refrattari (**Participant**)
- Progetto Regione Piemonte – piattaforma automotive 2012-2015 CARVOUR – (**Participant**)
- Progetto Regione Piemonte – C104: Studio per il miglioramento di sistemi elettrodici (MEA) per fuel cell a bassa temperatura – (**Participant**)
- European BRITE, 1998-2000, project n° BE97-4095. "Strategies for further improvement of performance and life of lead-acid batteries for electrical vehicle applications"- (**Participant**)
- Period: 2001-2003 – Contracts with Edison SpA on the topics: "Bifuctional air electrodes for Zinc/air batteries" & "Electrochemical deposition of superconductors on un-textured silver substrates". (**Participant**)
- Awarded "Young Researchers Project" funds from Politecnico di Torino, year 2000, topic "Iniezione e trasporto elettrocinetici di sostanze cariche e neutre in terreni argillosi"

In the frame of Joints Projects for the Internationalization of Research at Politecnico di Torino, she has been involved in a program of Internationalization among Politecnico and Argentinian Universities (University of Cordoba and La Plata) in the period: June-August 2018.

3. LIST OF RECENT PUBLICATIONS (2016-2017)

1. Versaci, D., Nasi, R., Zubair, U., Amici, J., Sgroi, M., Dumitrescu, M.A., Francia, C., Bodoardo, S., Penazzi, N. New eco-friendly low-cost binders for Li-ion anodes (2017) Journal of Solid State Electrochemistry, pp. 1-7. Article in Press. DOI: 10.1007/s10008-017-3665-5.

2. Zubair, U., Anceschi, A., Caldera, F., Alidoost, M., Amici, J., Francia, C., Zanetti, M., Trotta, F., Bodoardo, S., Penazzi, N. Dual confinement of sulphur with rGO-wrapped microporous carbon from β-cyclodextrin nanosponges as a cathode material for Li–S batteries (2017) Journal of Solid State Electrochemistry, pp. 1-10. Article in Press. DOI: 10.1007/s10008-017-3664-6.
3. Vankova, S., Versaci, D., Amici, J., Ferrari, A., Rizzi, R., Altomare, A., Guastella, S., Francia, C., Bodoardo, S., Penazzi, N. A high-capacity cathode based on silicates material for advanced lithium batteries (2017) Journal of Solid State Electrochemistry, pp. 1-8. Article in Press. DOI: 10.1007/s10008-017-3663-7.
4. Martinez Crespiera, S., Amantia, D., Knipping, E., Aucher, C., Aubouy, L., Amici, J., Zeng, J., Zubair, U., Francia, C., Bodoardo, S. Cobalt-doped mesoporous carbon nanofibres as free-standing cathodes for lithium–oxygen batteries (2017) Journal of Applied Electrochemistry, 47 (4), pp. 497-506. DOI: 10.1007/s10800-016-1035-0.
5. Zeng, J., Amici, J., Monteverde Videla, A.H.A., Francia, C., Bodoardo, S. Synthesis of mesoporous carbons and reduced graphene oxide and their influence on the cycling performance of rechargeable Li-O2 batteries (2017) Journal of Solid State Electrochemistry, 21 (2), pp. 503-514. DOI: 10.1007/s10008-016-3391-4.
6. Vankova, S., Francia, C., Amici, J., Zeng, J., Bodoardo, S., Penazzi, N., Collins, G., Geaney, H., O'Dwyer, C. Influence of Binders and Solvents on Stability of Ru/RuOx Nanoparticles on ITO Nanocrystals as Li–O2 Battery Cathodes (2017) ChemSusChem, 10 (3), pp. 575-586. DOI: 10.1002/cssc.201601301.
7. Francia, C., Amici, J., Tasarkuyu, E., Çoşkun, A., Gül, Ö.F., Şener, T. What do we need for the lithium-air batteries: A promoter or a catalyst? (2016) International Journal of Hydrogen Energy, 41 (45), pp. 20583-20591. DOI: 10.1016/j.ijhydene.2016.09.042.
8. Sevim, M., Francia, C., Amici, J., Vankova, S., Şener, T., Metin, Ö. Bimetallic MPt (M: Co, Cu, Ni) alloy nanoparticles assembled on reduced graphene oxide as high performance cathode catalysts for rechargable lithium-oxygen batteries (2016) Journal of Alloys and Compounds, 683, pp. 231-240. Cited 5 times. DOI: 10.1016/j.jallcom.2016.05.094.
9. Amici, J., Francia, C., Zeng, J., Bodoardo, S., Penazzi, N. Protective PVDF-HFP-based membranes for air de-hydration at the cathode of the rechargeable Li–air cell (2016) Journal of Applied Electrochemistry, 46 (5), pp. 617-626. Cited 3 times. DOI: 10.1007/s10800-016-0951-3.
10. Martinez Crespiera, S., Amantia, D., Knipping, E., Aucher, C., Aubouy, L., Amici, J., Zeng, J., Francia, C., Bodoardo, S. Electrospun Pd-doped mesoporous carbon nano fibres as catalysts for rechargeable Li-O2 batteries (2016) RSC Advances, 6 (62), pp. 57335-57345. Cited 2 times. DOI: 10.1039/c6ra09721a.
11. Amici, J., Alidoost, M., Francia, C., Bodoardo, S., Martinez Crespiera, S., Amantia, D., Biasizzo, M., Caldera, F., Trotta, F. O2 selective membranes based on a dextrin-nanosponge (NS) in a PVDF-HFP polymer matrix for Li-air cells (2016) Chemical Communications, 52 (94), pp. 13683-13686. DOI: 10.1039/c6cc06954a.

Torino, 20/10/2018