

# Daniel ALVES DALLA CORTE

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## RESEARCH INTERESTS

Personally, what fascinates me about research in Energy Storage is its multidisciplinary nature. In this area, chemistry, physics, engineering and design play important roles in the concept of materials and devices that will power our future. My research interests in this framework are focused on paving the way for this symbiosis. Developing new experiments and prototyping experimental setups to access key information on materials for energy storage and conversion.

## PROFESSIONAL EXPERIENCES

Dec. 2014 - Current	<b>Research Engineer in Energy Storage</b> Collège de France (Paris, France)	Materials characterization and in situ techniques for Li-ion, Na-ion and Na-O <sub>2</sub> systems Group of Prof. Tarascon
Oct. 2013 - Oct. 2014	<b>Post Doctoral Associate in Energy Storage</b> Total New Energies MIT (Cambridge, US)	Development of liquid metal batteries New chemistries for improved power density Prototyping and cost estimation Group of Prof. D.R. Sadoway
Oct. 2010 - Oct. 2013	<b>PhD in Physicochemistry of Li-ion Batteries</b> Laboratoire de Physique de la Matière Condensée École Polytechnique (Palaiseau, France)	Development of high capacity anodes: 10x more energy Development of surface treatments: 10% more efficient Technological transfer with company - SAFT

## EDUCATION

2013	<b>PhD in Physicochemistry of Li-ion Batteries</b>	École Polytechnique (Palaiseau, France) Financed by SAFT - France
2010	<b>Master in Materials for Energy Storage and Conversion</b>	Université Paul Sabatier (Toulouse, France) Warsaw University of Technology (Warsaw, Poland) Université Picardie Jules Verne (Amiens, France) Glasgow University (Glasgow, United Kingdom)
2008	<b>Master in Material Sciences</b>	UFRGS (Porto Alegre, Brazil)
2007	<b>Metallurgical Engineer</b>	UFRGS (Porto Alegre, Brazil)

## PATENTS

<b>Spectrochemical adaptor for in situ and operando UV-Vis measurements</b>	EP N° 15 306 283.1
<b>Electrochemical cell testing device</b>	EP N° 16 306 240.9
<b>Ion-selective intercalation membrane and method of preparation</b>	Under application process. Sunstein Kann Murphy & Timbers LLP / MIT Ref: 3745/1046

## PUBLICATIONS

<b>Practical Assessment of Anionic Redox in Li-Rich Layered Oxide Cathodes: A Mixed Blessing for High Energy Li-Ion Batteries</b>	J. of Electrochem. Soc. 163-14 (2016) A2965
<b>A<sub>2</sub>VO(SO<sub>4</sub>)<sub>2</sub> (A = Li, Na) as Electrodes for Li-Ion and Na-Ion Batteries</b>	Chemistry of Materials 28-18 (2016) 6637
<b>Microsized Sn as Advanced Anodes in Glyme-Based</b>	Advanced Materials 28-44 (2016) 9824
<b>A fully ordered triplite, LiCuSO<sub>4</sub>F</b>	Chemistry of Materials 28-6 (2016) 1607
<b>Electrochemical activity and ionic conductivity of a lithium copper pyroborate Li<sub>6</sub>CuB<sub>4</sub>O<sub>10</sub></b>	Phys. Chem. Chem. Phys. 18 (2016) 14960
<b>High Capacity Na-O<sub>2</sub> Batteries Key Parameters for Solution-Mediated Discharge</b>	J. Phys. Chem. C 120 (2016) 20068
<b>Molecular grafting on silicon anodes: artificial SEI and surface stabilization</b>	Electrochimica Acta 201 (2016) 70

## PUBLICATIONS

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- Spectroscopic Insight into Li-Ion Batteries during operation: An Alternative Infrared Approach** Advanced Energy Materials 6 (2016)
- Methylated silicon: a longer cycle-life material for Li-ion batteries** Journal of Power Sources 240 (2013) 551
- In-situ FTIR Study of Amorphous Silicon Anodes** 63<sup>rd</sup> ISE Annual Meeting, Prague (2012)
- The hydrogen evolution reaction on Ni-Polyaniline composite electrodes** Int. J. Hydrogen Energy 37 - 4 (2012) 3025
- Area effects on Mott-Schottky behavior of anodic films formed on AISI 304** Electrochem. Soc. Transactions 25 - 40 (2010) 123
- Silane film obtained from a sol constituted with TMSPMA and TEOS and performance as a post-treatment of zinc coating hexavalent chromate conversion film: the comparative** Electrochem. Soc. Transactions 25 - 29 (2010) 123
- Silane film obtained by sol gel process with cerium addition for post-treatment on zinc-talc composite coatings** Electrochem. Soc. Transactions 25 - 29 (2010) 113
- Selective dissolution of Ni from NITINOL for increasing the biocompatibility** Electrochem. Soc. Transactions 21 - 11 (2008) 29