Prof. Dr. Andrea Balducci

Curriculum vitae (October 2023)

Contact details

Address:

Place of residence:

Mobil:

E-Mail:

Personal information

Date of birth:

Place of birth:

Nationality:

Family status:

Education

15/10/2014	**Habilitation in Physical Chemistry** at the Westfälische Wilhelms-Universität Münster, Germany Title of the thesis: "Design of ionic liquid-based electrolytes for high power devices".
11/12/2006	**PhD in Materials Sciences** at the Paul Sabatier University of Toulouse, France with "mention très honorable". Title of the thesis "Hybrid supercapacitors based on activated carbon and conducting polymers using ionic liquids as electrolytes". The PhD project was funded by the Italian- French University as part of the Vinci project 2003 and involved the Paul Sabatier University of Toulouse (France) and the University of Bologna (Italy).
22/03/2001	**Degree in Chemistry** at the University of Bologna with 108/110 points. Title of the thesis: "Photophysics and redox property of supramolecular Ru and Os polypiridine complexes".
1995	**Maturità Scientifica**, attained at the "Istituto Tecnico Commerciale Statale L. Einaudi" in Novafeltria (PU) (54/60).

Scientific career

02/2023	Call for W3 professorship in Electrochemistry from University of Bayreuth (declined)
04/2022	Visiting Professor at the “Institut des Matériaux de Nantes Jean Rouxel”, University of Nantes (France)
Since 10/2019	Director of the Institute for Technical Chemistry and Environmental Chemistry of the Friedrich-Schiller University Jena
Since 06/2016	Professor for “Applied Electrochemistry” (W2) at the Friedrich-Schiller University Jena, Institute for Technical Chemistry and Environmental Chemistry Center for Energy and Environmental Chemistry (CEEC Jena).
01/02 2016	Call from Friedrich-Schiller University Jena (accepted) and Dresden University of Technology (declined).
01/2015 – 05/2016	Senior researcher at the Helmholtz Institute Ulm, Germany.
10/2009 – 12/2014	Scientific leader of the independent research group "Supercapacitors and lithium-ion hybrid supercapacitors based on ionic liquids” at the Institute of Physical Chemistry, Westfälische Wilhelms-Universität Münster, Germany.
04/2008 -09/2009	Researcher at the Institute of Physical Chemistry, Westfälische Wilhelms-Universität Münster, Germany in the research group of Prof. Martin Winter.
02/2007 - 03/2008	Postdoctoral fellowship within the European Project “ILLIBATT”, “Ionic Liquid-based Lithium Batteries” (Call Identifier: FP6-2004-NMP-TI-4, Project Number: STRP 033181) in the research group of Prof. Martin Winter at the Institute of Chemistry and Technology of Inorganic Materials (ICTAS), Graz University of Technology, Austria.
11/2006 - 01/2007	Postdoctoral fellowship within the European Project “ILHYPOS”, “Ionic Liquid Hybrid Power Supercapacitors” (TST4-CT-2005-518307, Contract Number 518307) in the research group of Prof. Marina Mastragostino at the "UCI-Scienze Chimiche, Radiochimiche e Metallurgiche", University of Bologna, Italy.
10/2003 - 10/2006	Doctoral thesis within a PhD project involving Paul Sabatier University of Toulouse, France (Prof. Patrice Simon) and University of Bologna, Italy (Prof. Marina Mastragostino) funded by the Italian- French University as part of the Vinci project 2003. Title of the thesis: “Hybrid supercapacitors based on activated carbon and conducting polymers”.
01/2003 - 09/2003	Master fellowship within the European Project “SUSANA” “Supramolecular Self-Assembly of Interfacial Nanostructures” in the research groups of Prof. Robert Forster and Prof. Han Vos at the School of Chemical Science, Dublin City University, Ireland.
01/2002 - 12/2002	Graduate student fellowship within the project "Materials for electrochemical energetic” in the research group of Prof. Marina Mastragostino at the "UCI-Scienze Chimiche, Radiochimiche e Metallurgiche", University of Bologna, Italy. (This stipend gave me the release from the military service)
06/2000 -03/2001	Diploma thesis about “Photophysics and redox property of supramolecular Ru and Os polypiridine complexes" in the research group of Prof. Vincenzo Balzani (under the supervision of Prof. Alberto Juris) at the Istituto di Chimica “G. Ciamician”, University of Bologna, Italy.

Languages spoken

Italian	Native speaker
Englisch	Fluent (written and oral)
French	Fluent (written and oral)
German	Fluent (oral) very good knowledge (written)

Memberships

- Electrochemical Society (ECS)
- International Society of Electrochemistry (ISE) – Past Division chair (Division 3, Electrochemical Energy Conversion and Storage) of the International Society of Electrochemistry
-

Advisory/editorial board in journals

- Member of the advisory board of Electrochimica Acta
- International advisory board of ChemSusChem
- Member of the Editorial board of Electrochemistry Communications
- Member of the Editorial board of Batteries & Supercaps
- Member of the Editorial Advisory Board of Journal of Power Sources Advances

Guest Editor

- Guest editor of the special section "Electrochemical capacitors: present and future of an emerging technology" in the Journal of Power Sources
- Guest Editor (together with Prof. M. Korth) Special issue "Interfacing experiment and theory for the development of new materials for electrochemical energy storage" of ChemSusChem

Conference and Symposium organizer

- Organizer of the symposium "2nd German-French Summer Atelier on high power devices" Nantes (France), June 19-23, 2023
- Organizer of the symposium "Understanding and application of fast storage processes (Supercapacitors & high power systems)" 72nd Annual meeting of the Internationl Society of Electrochemistry, Jeju Island(Korea), August 29- September 3, 2021
- Organizer of the symposium "1st German-French Summer Atelier on high power devices" Jena (Germany), September 14-17, 2020
- Co-Organizer of the symposium "Supercapacitors: from Double-Layer Electrochemical Capacitors to Faradaic-Based High Power Systems", 69th Annual meeting of the International Society of Electrochemistry, Bologna (Italy), September 2-7, 2018
- Chair of the 5th International Symposium on Enhanced Electrochemical Capacitors (ISEE Cap 2017) Jena (Germany) July 10-14, 2017.

Awards/Recognitions

- Listed by Thomson Reuter in the ISI Highly Cited Researcher 2016 in Engineering

Summary of teaching activities

Currently, 2 postdoc, 14 PhD students, 2 master students are working under my supervision on the development of new materials and electrolytes for energy storage devices.

Friedrich-Schiller University Jena (since 2016)
Since 2018 responsible and spoke person of the master program "Chemie-Energie-Umwelt" of the Friedrich Schiller University of Jena

For the bachelor degree In Chemistry

- Technical Chemistry I (SS)
- Umweltchemie I (WS)
- Umweltchemie II (SS)

For the master Chemie-Energie Umwelt

- Electrochemistry (WS)
- Applied Electrochemistry (WS)
- Elektrochemische Energiespeicher und wandler (SS)
- Interdisziplinäre Wissenschaftskommunikation (WS)
- Grundlagen Energiesysteme (WS)

For the master Chemistry of Materials

- Batteries and fuel cells (SS)

For the master in Chemistry

- Energiesysteme: Materialien und Design I (SS)

Karlsruhe Institute of Technology
Lecturer of the course "Electrochemistry for energy storage" for the master degree in chemistry (WS 2015/16)

Westfälische Wilhelms-Universität Münster

- Lecturer of the course "Forschungsstrategien in physikalischen, chemischen und pharmazeutischen Technologien" for the master degree in chemistry (WS 2014/15)
- Lecturer of the course "Energy module" for the master degree in chemistry (WS 2013/14)
- Lecturer of the course "Physical Chemistry of the solid state" for the master degree in chemistry
- Lecturer of the course "Thermodynamic" for the Bachelor degree in chemistry (SS 2013/14)
- Lecturer of the course "Batteries Technology" for the bachelor degree in chemistry (WS 2009/10)

List of publications
(*note:* **A. Balducci** *means corresponding author)*
13354 citations; H-index: 58 (from Google Scholar 16th October 2023)
https://scholar.google.de/citations?user=Ab01DMUAAAAJ&hl=de&oi=ao

2023

189.
J. W. Gittins; Y. Chen; S. Arnold; V. Augustyn; ***A. Balducci****; T. Brousse; E. Frackowiak; P. Gómez-Romero; A. Kanwade; L. Köps; P. K. Jha; M. Meo; D. Pandey; L. Pang; V. Presser; M. Rapisarda; D. Rueda-García; S. Saeed; P. M. Shirage; A. Ślesiński; F. Soavi; J. Thomas; M.-M. Titirici; H. Wang; Z. Xu; A. Yu; M. Zhang, A. C. Forse, Interlaboratory Study Assessing the Analysis of Supercapacitor Electrochemistry Data,* Journal of Power Sources, 585, 233637 (2023)

188.
L. Köps, F. A. Kreth, M. Klein, **A. Balducci**, *An in-depth investigation into the influence of temperature on the electrochemical behavior of electric double-layer capacitors containing ethyl isopropyl sulfone-based electrolytes,* Journal of Power Sources, 581, 233480 (2023)

187.
E. Pameté, L. Köps, F. A. Kreth, S. Pohlmann, A. Varzi, T. Brousse, **A. Balducci**, V. Presser, *The Many Deaths of Supercapacitors: Degradation, Aging, and Performance Fading,* Advanced Energy Materials, 2301008 (2023)

186.
P. Zaccagnini, L. H. Heß, M Laurenti, A Lamberti, **A. Balducci**, *From Aluminum Dissolution in supercapacitors to electroplating: a new way for Al thin film deposition?* Advanced Materials Interfaces, 10, 2202470 (2023)

185.
M. Orbay, D. Leistenschneider, C. Leibing, **A. Balducci**, *A novel strategy to enable effective use of dioxalane-based electrolytes in lithium-ion batteries*, ChemElectroChem, *e202300171, (2023)*

184.
C. Aphirakaramwong, O. Akintola, C. T. Plass, M. Sawangphruk, W. Plass, **A. Balducci**, *Anionic pillared-layer MOF as electrode material for potassium-ion capacitor,* RCS Advances, 13, 12277-12284 (2023)

183.
L. Köps, P. Ruschhaupt, C. Guhrenz, P. Schlee, S. Pohlmann, A. Varzi, S. Passerini, **A. Balducci** *Development of a high-energy electrical double-layer capacitor demonstrator with 5000 F in an industrial cell format,* Journal of Power Sources, 571, 233016 (2023)

182.
S. Kirchhoff, C. Leibing, P. Härtel, S. Dörfler, T. Abendroth, H. Althues, S. Kaskel, **A. Balducci** *Evaluation of glyoxal-based electrolytes for lithium-sulfur batteries,* Batteries 9 (4), 210 (2023)

181.
C. Leibing, D. Leistenschneider, C. Neumann, M. Oschatz, A. Turchanin, **A. Balducci**, *Glyoxylic-acetal-based electrolytes for sodium-ion batteries and sodium-ion capacitors,* ChemSusChem e202300161 (2023)

180.
S.D. Magar, C. Leibing, J.L. Gómez-Urbano, R. Cid Barreno, D. Carriazo, **A. Balducci**, *Brewery waste derived activated carbon for high performance electrochemical capacitors and lithium-ion capacitors,* Electrochimica Acta 446, 142104 (2023)

179.
A. Bothe, S. E. M. Pourhosseini, P. Ratajczak, F. Béguin, **A. Balducci**, *Analysis of thermal and electrochemical properties of electrical double-layer capacitors by using an in-situ simultaneous thermal analysis cell,* Electrochimica Acta, 141974 (2023)

178.
B. Babu, C. Neumann, S. Muench, M. Enke, L. Medenbach, C. Leibing, A. Lex-Balducci, A. Turchanin, U. S. Schubert, **A. Balducci**, *Diglyme-based Gel Polymer Electrolytes for K-ion capacitors,* Energy Storage Materials, 56, 342-350 (2023)

177.
F. A. Kreth, L. H. Heß, **A. Balducci**, *In-operando GC-MS: a new tool for the understanding of degradation processes occurring in electrochemical capacitors,* Energy Storage Materials, 56, 192-204 (2023)

176.
J.L. Gómez-Urbano, C. Leibing, M. Jauregui, S. Darlami-Magar, D. Saurel, D. Carriazo, **A. Balducci**, *Unravelling charge storage mechanisms of lithium, sodium and potassium into graphene-coffee waste derived hard carbon composites,* Batteries & Supercaps, e202200508 (2023)

2022

175.
F. A. Kreth**, A. Balducci,** *Solid-liquid interfaces/interphases in electrochemical capacitors: theoretical considerations, practical relevance, and state-of-the-art in-situ/in-operando characterization tools*, accepted for publication in Encyclopedia of Solid-Liquid Interfaces

174.
B. Babu, **A. Balducci**, *High-Power Sodium-ion Batteries and Sodium-ion Capacitors*, Sodium-Ion Batteries: Materials, Characterization, and Technology 2, 573-601(2022)

173.
L. Köps, F. A. Kreth, D. Leistenschneider, K. Schutjajew, R. Gläßner, M. Oschatz, **A. Balducci** *Improving the stability of supercapacitors at high voltages and high temperatures by the implementation of ethyl isopropyl sulfone as electrolyte solvent,* Advanced Energy Materials, *2203821* (2022)

172.
K. S. Teoh, M. Melchiorre, F. A. Kreth, A. Bothe, L. Köps, F. Ruffo, **A. Balducci** *γ-valerolactone as sustainable and low-toxic solvent for electrical double layer capacitors,* ChemSusChem, *e202201845* (2022)

171.
T. Stettner, S. Liu, Y. Liu, L. Dick, B. Kirchner, **A. Balducci**, *Hygroscopic protic ionic liquids as electrolytes for electric double layer capacitors,* Energy Storage Materials, 53, 744-753 (2022)

170.
S. Liu, T. Stettner, R. Klukas, T. Porada, K. Furda, A. M. Fernández, **A. Balducci**, *Caesium acetate based electrolytes for aqueous electrical double layer capacitor,* ChemElectroChem e202200711 (2022)

169.
A. Bothe, **A. Balducci**, *Thermal analysis of Electrical Double Layer Capacitors: present status and remaining challenges,* Journal of Power Sources 548, 232090 (2022)

168.
S. D. Magar, C. Leibing, J. L. Gómez-Urbano, D. Carriazo, **A Balducci**, *Brewers' spent grains derived carbon as anode for alkali metal ion batteries,* Energy Technology, 2200379, (2022)

167.
L. Gehrlein, C. Leibing, Christian, K. Pfeifer,F. Jeschull, **A. Balducci,** J. Maibach, *Glyoxylic Acetals as Electrolytes for Si/Graphite Anodes in Lithium-Ion Batteries,* Electrochimica Acta, 140642 (2022)

166.
L. Köps, P. Zaccagnini, C. F. Pirri, **A. Balducci**, *Determination of reliable resistance values for electrical double-layer capacitors*, Journal of Power Sources Advanced, 16, 100098 (2022)

165.
S. Liu, R. Klukas, T. Porada, K. Furda, A. M. Fernández, **A. Balducci**, *Potassium formate-based electrolytes for high performance aqueous electrochemical capacitors*, Journal of Power Sources, 541, 231657 (2022)

164.
A Bothe, L. Gehrlein, Q. Fu, C. Li, J. Maibach, S. Dsoke, **A. Balducci,** *Glyoxal-Based Electrolytes in Combination with Fe_2O_3@C-Based Electrodes for Lithium-Ion Batteries,* Batteries & Supercaps 5 (8), e202200152 (2022)

163.
S. Liu, L.C. Meyer, L. Medenback, **A. Balducci**, *Glyoxal-based electrolytes for potassium-ion batteries,* Energy Storage Materials 47, 534-541 (2022)

162.
B.P. Rodrigues, G.N.B. Mauricio de Macedo, Y. Xia, **A. Balducci**, L. Wondraczek, *Hybrid Polyethylene Glycol/Sodium Metaphosphate Composites Prepared via Coacervation,* Nanomaterials 12 (3), 528 (2022)

161.
O. Akintola, P. Gerlach, C. T. Plass, **A. Balducci**, W. Plass, *Enhancing Capacity and Stability of Anionic MOFs as Electrode Material by Cation Exchange*, Frontiers in Chemistry, section Electrochemistry, 10, 836325 (2022)

2021

160.
L. Köps, F. A. Kreth, A. Bothe, **A. Balducci**, *High voltage electrochemical capacitors operating at high temperature based on 1,1-dimethylpyrrolidinium tetrafluoroborate,* Energy Storage Materials 44, 66-72 (2021)

159.
P. Borchers, P. Gerlach, Y. Liu, M. Hager, **A. Balducci**, U. S. Schubert, *The Influence of the Nature of the Redox Active Moieties on the Properties of Redox Active Ionic Liquids and on their Use as Electrolyte for Supercapacitors,* Energies 14 (19), 6344 (2021)

158.
B. Babu, M. Enke, S. Prykhodska, A. Lex-Balducci, U. S. Schubert, **A. Balducci**, *New Diglyme-based Gel Polymer Electrolytes for Na-based Energy Storage Devices,* ChemSusChem 14 (21), 4836-4845

157.
C. Leibing, **A. Balducci**, *Glyoxylic-acetal-based electrolytes in combination with soft and hard carbon electrodes for lithium-ion batteries: An evaluation of room and high temperature performance,* Journal of the Electrochemical Society, 168, 090533 (2021)

156.
M. Melchiorre, R. Esposito, M. Di Serio, G. Abbate, A. Lampasi, **A. Balducci**, F. Ruffo, *Lactic acid-based solvents for sustainable EDLC electrolytes*, Energies, 14, 4250 (2021)

155.
S. Gehrke, P. Ray, T. Stettner, **A. Balducci,** B. Kirchner, *Water in Protic Ionic Liquid Electrolytes: From solvent separated ion pairs to water clusters,* ChemSusChem, 14, 1-11 (2021)

154.
L. H. Hess, A.Bothe, **A. Balducci**, *Design and use of a novel in-situ STA cell for an accurate "real time" monitoring of the heat and weight changes occurring in electrochemical capacitors,* Energy Technology, 2100329 (2021)

153.
Z. Zhao, L. Gehrlein, A. Bothe, J. Maibach, **A. Balducci**, S. Dsoke *Impact of 3-cyanopropionic acid methyl ester on the electrochemical performance of ZnMn2O4 as negative electrode for Li-ion batteries,* Energy Technology, 2100247 (2021)

152.
T. Stettner, **A. Balducci**, *Protic ionic liquids in energy storage devices: Past, present and future perspective,* Energy Storage Materials 40, 402-414 (2021)

151.
A. Bothe, S.E.M Pourhosseini, P. Ratajczak, F. Beguin, **A. Balducci**, *Towards understanding the impact of operating voltage on the stability of adiponitrile-based electrical double-layer capacitors,* Journal of Power Sources, 496, 229841 (2021)

150.
B. Babu, C. Neumann, M. Enke, A. Lex-Balducci, A. Turchanin, U. S. Schubert, **A. Balducci**, *Aging processes in high voltage lithium-ion capacitors containing liquid and gel-polymer electrolytes,* Journal of Power Sources, 496, 229797 (2021)

149.
L. Medenbach, L. C. Meyer, **A. Balducci**, Reversible potassium-ion intercalation into graphite electrodes in glyoxal-based electrolytes, Electrochem. Commun 125, 107001 (2021)

148.
P. Gerlach, **A. Balducci**, *The influence of current density, rest time and electrolyte composition on the self-discharge of organic radical polymers,* Electrochimica Acta, 377, 138070 (2021)

147.
S.E.M Pourhosseini, A. Bothe, **A. Balducci**, F. Beguin, P. Ratajczak, *Strategy to assess the carbon electrode modifications associated with high voltage ageing of electrochemical capacitors in organic electrolyte,* Energy Storage Materials, 38, 17-29 (2021)

146.
A. Bothe, **A. Balducci**, *The impact of the thermal stability of non-conventional electrolytes on the behavior of high voltage electrochemical capacitors operating at 60 °C,* Electrochimica Acta 274, 137919 (2021)

145.

L. H. Hess, N. Fulik, J. Röhner, E. Zhang, S. Kaskel, E. Brunner, **A. Balducci**, *The role of diffusion processes in the self-discharge of electrochemical capacitors,* Energy Storage Materials, 37, 501-508 (2021)

144.

L. Köps, C. Leibing, L. H. Hess, **A. Balducci**, *Mixtures of glyoxylic acetals and organic carbonates as electrolytes for Lithium-Ion Batteries,* Journal of the Electrochemical Society, 168, 010513 (2021)

143.

M. J. Mostazo-López, J. Krummacher, **A. Balducci**, E. Morallón, D. Cazorla-Amorós, *Electrochemical performance of N-doped superporous activated carbons in ionic liquids-based electrolytes,* Electrochimica Acta, 368, 137590 (2021)

142.

S. Muench, P. Gerlach, R. Burges, M. Strumpf, A. Wild, A. Lex-Balducci, J.C. Brendel, **A. Balducci**, U.S. Schubert, *Emulsion polymerizations for a sustainable preparation of efficient TEMPO-based electrodes,* ChemSusChem, 14, 449–455 (2021)

141.

G. Lingua, M. Falco, T. Stettner, C. Gerbaldi, **A. Balducci**, *Enabling safe and stable Li metal batteries with protic ionic liquid electrolytes and high voltage cathodes,* Journal of Power Sources, 481 228979 (2021)

140.

T. Palaniselvam, B. Babu, M. Hyein, I. Hasa, A. L. Santhosha, M. Goktas, Y.-N. Sun, L. Zhao, B.-H Han, S. Passerini, **A. Balducci**, P. Adelhelm, *Tin containing graphite for sodium-ion batteries and hybrid capacitors,* Batteries & Supercaps, 4, 173 –182 (2021)

2020

139.

A. Marie, B. Said, A. Galarneau, T. Stettner, **A. Balducci**, M. Bayle, B. Humbert, J. Le Bideau, *Silica based ionogels: interfaces effects with aprotic and protic ionic liquids with lithium* Physical Chemistry Chemical Physics, 22, 24051 – 24058 (2020)

138.

T. Stettner, G. Lingua, M. Falco, **A. Balducci**, C. Gerbaldi, *Protic ionic liquids based cross-linked polymer electrolytes: a new class of solid electrolytes for energy storage devices,* Energy Technology, 2000742 (2020)

137.

P. Gerlach, R. Burges, A. Lex-Balducci, U.S. Schubert, **A. Balducci**, *Aprotic and protic ionic liquids as electrolytes for organic radical polymer batteries*, Journal of the Electrochemical Soc. 167, 120546 (2020)

136.

B. Babu, **A. Balducci**, *Self-discharge of lithium-ion capacitors,* Journal of Power Sources Advances, 5, 100026 (2020)

135.

C. Zhang, Y. Xu, K. He, Y. Dong, H. Zhao, L. Medenbach, Y. Wu, **A. Balducci**, T.Hannappel, Y. Lei, *Polyimide@Ketjenblack Composite: A Porous Organic Cathode for Fast Rechargeable Potassium-Ion Batteries,* Small, 16, 2002953 (2020)

134.

T. Stettner, R. Dugas, A. Ponrouch, **A. Balducci** *Ionic liquid electrolytes for calcium-based energy storage systems,* Journal of the Electrochemical Soc. 167, 100544 (2020)

133.

B. Babu. P. Simon, **A. Balducci** *Fast Charging Materials for High Power Applications,* Advanced Energy Materials, 2001128 (2021)

132.

P. Gerlach, **A. Balducci** *A critical analysis about the underestimated role of the electrolyte in batteries based on organic materials,* ChemElectroChem, 7, 2364-2375 (2020)

131.

D. Leistenschneider, L.H. Heß, **A. Balducci**, L. Borchardt, *Solid-State transformation of aqueous to organic electrolyte - Enhancing the operating voltage window of 'in situ electrolyte' supercapacitors,* Sustainable Energy & Fuels, 4, 2438-2447 (2020)

130.

R. Chen, D. Bresser, M. Saraf, P. Gerlach, **A. Balducci**, S. Kunz, D. Schröder, S. Passerini, J. Chen *A comparative review of electrolytes for organic material-based energy storage devices employing solid electrodes and redox fluids***,** ChemSusChem, 13, 1–16 (2020)

129.

C. Schütter, A. Varzi, L. Lodovico, P. Ruschhaupt, **A. Balducci**, *Casein-derived activated carbon: turning expired milk into active material for electrochemical capacitors,* Energy Technology, 1901225 (2020)

128.

L. Medenbach, P. Hartmann, J. Janek, T. Stettner, **A. Balducci**, C. Dirksen, M. Schulz, P. Adelhelm *A sodium-polysulfide battery with liquid/solid electrolyte: Improving Sulfur utilization by using P2S5 as additive and tetramethylurea (TMU) as catholyte solvent,* Energy Technology 1901200 (2020)

127.

C. Schütter, A. Bothe, **A. Balducci**, *Mixtures of Acetonitrile and Ethyl Isopropyl Sulfone as Electrolytes for Electrochemical Double Layer Capacitors,* Electrochimica Acta, 331, 135421 (2020)

2019

126.

M. Arnaiz, A. Bothe, S. Dsoke, **A. Balducci**, J. Ajuria *Aprotic and protic ionic liquids combined with olive pits derived hard carbon for potassium-ion batteries, J. Electrochem. Soc. 166(14): A3504-A3510 (2019)*

125.

L.H. Heß, S. Wankmüller, A. Bothe, **A. Balducci,** *Safe, low-cost and SEI forming electrolytes for lithium-ion batteries based on glyoxylic acetal solvents,* Batteries & Supercaps, 2, 852– 857 (2019)

124.

T. Stettner, S. Gehrke, P. Ray, B. Kirchner **A. Balducci**, *Water in Protic Ionic Liquids: Properties and Use of a Novel Class of Electrolytes for Energy Storage Devices,* ChemSusChem, 12, 3827-2836 (2019)

123.
M. Arnaiz, E. Goikolea, T. Rojo, L. Wittscher, **A. Balducci**, J. Ajuria, *On the use of 3-cyanopropionic acid methyl ester as alternative solvent for high voltage dual carbon-based Lithium ion capacitors,* Journal of Power Sources, 434, 226757 (2019)

122.
J. Krummacher L.H. Heß, **A. Balducci**, *Al(TFSI)$_3$ in acetonitrile as electrolytes for electrochemical double layer capacitors,* Journal of the Electrochemical Society, 166 (10) A1763-A1768 (2019)

121.
C. Schütter, S.Pohlmann, **A. Balducci**, *Industrial Requirements of Materials for Electrical Double Layer Capacitors: Impact on Current and Future Applications,* Advanced Energy Materials DOI: 10.1002/aenm.201900334, 1900334 (2019)

120.
L.H. Heß, L. Wittscher, **A. Balducci**, *The impact of carbonate solvents on the self-discharge, thermal stability and performance retention of high voltage electrochemical double layer capacitors,* Physical Chemistry Chemical Physics, 21, 9089-9097 (2019)

119.
P. Gerlach, R. Burges, A. Lex-Balducci, U. S. Schubert, **A. Balducci**, *Influence of the salt concentration on the electrochemical performance of electrodes for polymeric batteries,* Electrochimica Acta, 306, 610-616 (2019)

118.
T. Stettner, F. C. Walter **A. Balducci** *Imidazolium-based Protic Ionic Liquids as Electrolytes for Lithium-Ion Batteries,* Batteries & Supercaps 2 (1), 55-59 (2019)

2018

117.
M. Goktas, B. Akduman, P. Huang, **A. Balducci**, P. Adelhelm *Temperature Induced Activation of Graphite Co-intercalation Reactions for Glymes and Crown Ethers in Sodium-ion Batteries*, Journal of Physical Chemistry C, 12 (47) 26816-26824 (2018)

116.
P. Ray, **A. Balducci**, B. Kirchner*, Molecular dynamics simulations of lithium doped ionic-liquid electrolytes,* Journal of Physical Chemisty B, 111, 10535-10547 (2018)

115.
P. Gerlach, R. Burges, A. Lex-Balducci, U. S. Schubert**, A. Balducci**, *The influence of the electrolyte composition on the electrochemical behaviour of cathodic materials for organic radical batteries*, Journal of Power Sources, 405, 142-149 (2018)

114.
M. Arnaiz, P. Huang, J. Ajuria, T. Rojo, E. Goikolea, **A. Balducci**, *Protic and aprotic ionic liquids in combination with hard carbon for lithium-ion and sodium-ion batteries,* Batteries & Supercaps, 1, 204-2018 (2018)

113.
J. Krummacher, **A. Balducci**, *Al(TFSI)$_3$ as conducting salt for high voltage electrochemical double layer capacitors,* Chemistry of Materials, 30, 4857-4863 (2018)

112.
L. H. Heß, **A. Balducci***1,2-Butylene carbonate as solvent for EDLCs*, Electrochimica Acta, 281, 437–444 (2018)

111.
L. H. Heß, **A. Balducci** *Glyoxal-based solvents for electrochemical energy storage devices,* ChemSusChem, 11, 1919-1926 (2018)

110.
J. Krummacher, C. Schütter, L. H. Hess, **A. Balducci** *Non-aqueous electrolytes for electrochemical capacitors,* Current Opinion in Electrochemistry 9, 64-69 (2018)

109.
T. Stettner, P. Huang, M. Goktas, P. Adelhelm, **A. Balducci** *Mixtures of Glyme and aprotic-protic ionic liquids as electrolytes for energy storage devices,* Journal of Chemical Physics 148, 193822 (2018)

108.
Z. Lin, E Goikolea, **A. Balducci**, K. Naoi, P.L. Taberna, M. Salanne, G. Yushin, P. Simon, *Materials for Supercapacitors: When Li-Ion Battery Power is Not Enough,* Materials Today, 21 (4), 419-436 (2018)

2017
107.
G. Moreno-Fernández, C. Schütter, J. M. Rojo, S. Passerini, **A. Balducci**, T. A. Centeno, *On the interaction of carbon cloth electrodes and non conventional electrolytes in high-voltage electrochemical capacitors,* Journal of Solid State Electrochemistry doi.org/10.1007/s10008-017-3809-7

106.
H. Hu, L. Wu, P. Gebhardt, X. Zhang, A. Cherevan, B. Gerke, R. Poettgen, **A. Balducci**, S. Passerini, D. Eder, *Growth mechanism and electrochemical properties of hierarchical hollow SnO2 microspheres with "chest-nut" morphology,* CrystEngComm, 19, 6454-6463 (2017)

105.
J. Krummacher, L.H. Heß, **A. Balducci**, *Anodic dissolution of Al current collectors in unconventional solvents for high voltage electrochemical double layer capacitors*, ChemSusChem, 10, 4178 – 4189 (2017)

104.
A. Balducci, D. Belanger, T. Brousse, J.W. Long, W. Sugimoto *A guideline for reporting performance metrics with electrochemical capacitors: From electrode materials to full devices,* Journal of the Electrochemical Society, 164 (7) A1487-A1488 (2017)

103.
P. Ray, T. Vogl, **A. Balducci**, B. Kirchner *Structural Investigations on Lithium-doped Protic and Aprotic Ionic Liquids,* Journal of Physical Chemistry B, 121, 5279-5292 (2017)

102.
T. Vogl, S. Passerini, **A. Balducci**, *The impact of mixtures of protic ionic liquids on the operative temperature range of use of battery systems,* Electrochemistry Communications, 78, 47-50 (2017)

101.
A. Vlad and **A. Balducci**, *Supercapacitors: porous materials get energized*, Nature Materials, News&Views 16,161–162 (2017)

100.
A. Balducci, *Ionic liquid in Lithium-Ion Batteries*, Topics in Current Chemistry, 2, 375 (2017)

99.

A.R. Neale, C. Schütter, P. Wilde, P. Goodrich, C. Hardacre, S. Passerini, **A. Balducci**, J. Jacquemin; *Physical-Chemical Characterization of Binary Mixtures of 1-Butyl-1-methylpyrrolidinium Bis{(trifluoromethyl)sulfonyl}imide and Aliphatic Nitrile Solvents,* Journal of Chemical & Engineering Data, 62, 376-390 (2017)

98.

C. Schütter, S. Passerini, M. Korth, **A. Balducci,** *Cyano Ester as Solvent for High Voltage Electrochemical Double Layer Capacitors* Electrochimica Acta, 224, 278–284 (2017)

97.

J. Krummacher, C. Schütter, S. Passerini, **A. Balducci** *Characterization of different conductive salts in ACN-based electrolytes for electrochemical double layer capacitors,* ChemElectroChem, 4, 353-361 (2017)

2016

96.

S. Leyva-García, D. Lozano-Castelló, E. Morallón, T. Vogl, C. Schütter, S. Passerini, A. **Balducci,** D. Cazorla-Amoros *Electrochemical performance of a superporous activated carbon in ionic liquid-based electrolytes,* Journal of Power Sources, 336, 419-426 (2016)

95.

C. Schütter, A.R. Neale, P. Wilde, P. Goodrich, C. Hardacre, S. Passerini, J. Jacquemin, **A. Balducci**, *The use of binary mixtures of 1-butyl-1-methylpyrrolidinium bis{(trifluoromethyl)sulfonyl}imide and aliphatic nitrile solvents as electrolyte for supercapacitors* Electrochimica Acta, 220, 146-155 (2016)

94.

A. Varzi, C. Schütter, J. Krummacher, R. Raccichini, C. Wolff, G.-T. Kim, S. Rösler, B. Blumenröder, T. Schubert, S. Passerini, **A. Balducci**, *A 4 Farad High Energy Electrochemical Double Layer Capacitor Prototype Operating at 3.2 V (IES prototype*) Journal of Power Sources, 326, 162-169 (2016)

93.

A. R. Neale, S. Murphy, P. Goodrich, C. Schütter, C. Hardacre; S. Passerini; **A. Balducci**, J. Jacquemin, *An ether-functionalised cyclic sulfonium based ionic liquid as an electrolyte for electrochemical double layer capacitors* Journal of Power Sources, 326, 549-559 (2016)

92.

C. Schütter, T. Husch, V. Viswanathan, S. Passerini, **A. Balducci**, M. Korth, *Rational design of new electrolyte materials for electrochemical double layer capacitors,* Journal of Power Sources 326, 541-548 (2016)

91.

T. Vogl, C. Vaalma, D. Buchholz, M. Secchiaroli, R. Marasis, S. Passerini, **A. Balducci,** *The Use of Protic Ionic Liquids with Cathodes for Sodium-Ion Batteries,* Journal of Mat. Chem. A. 4, 10472 – 10478 (2016)

90.

P. Ray, S. Dohm, T. Husch, C. Schütter, K. A. Persson, **A. Balducci**, B. Kirchner, M. Korth, *Insights into bulk electrolyte effects on the operative voltage of EDLCs* The Journal of Physical Chemistry Part C, 120, 12325-12336 (2016)

89.

A. Balducci, Electrolytes for high voltage electrochemical double layer capacitors: a perspective article, Journal of Power Sources, 326, 534-540 (2016)

88.

T. Vogl, P. Goodrich, J. Jacquemin, S. Passerini, **A. Balducci**, *The Influence of Cation Structure on the Chemical-Physical Properties of Protic Ionic Liquids*, The Journal of Physical Chemistry Part C, 120, 8525-8533 (2016)

87.

C. Ramirez-Castro, C. Schütter, S. Passerini, **A. Balducci**, *Microporous carbonaceous materials prepared from biowaste for supercapacitors application,* Electrochimica Acta 206, 452-457 (2016)

2015

86.

J. Krummacher, S. Passerini, **A. Balducci**, *Ionic liquid assisted solid-state synthesis of lithium iron oxide nanoparticles for rechargeable lithium ion batteries,* Solid State Ionics 280, 37–43 (2015)

85.

C. Schütter, T. Husch, M. Korth, **A. Balducci**, *Toward New Solvents for EDLCs: From Computational Screening to Electrochemical Validation,* Journal of Physical Chemistry Part C 119, 13413-13424 (2015)

84.

C. Wolff, S. Jeong, E. Paillard, **A. Balducci**, S. Passerini, *High power, solvent-free electrochemical double layer capacitors based on pyrrolidinium dicyanamide ionic liquids*, Journal of Power Sources 293, 65-70 (2015)

83.

L. Xiao, M. Schroeder, S. Kluge, **A. Balducci**, U. Hagemann, C. Schulz, H. Wiggers, *Direct self-assembly of Fe_2O_3/reduced graphene oxide nanocomposite for high-performance lithium-ion batteries,* J. Mat. Chem. A. 3, 11566-11574 (2015)

82.

S. Menne, T. Vogl, **A. Balducci**, *Synthesis and electrochemical characterization of bis(fluorosulfonyl)imide-based protic ionic liquids*, ChemComm, 51, 3656-3659 (2015)

81.

R. Raccichini, A. Varzi, V. S. K. Chakravadhanula, C. Kübel, **A. Balducci**, S. Passerini *Innovative Ionic Liquid-Assisted Synthesis of Graphene with Improved Low-Temperature Battery Performance,* Journal of Power Sources 281, 318-325 (2015)

80.

S. Pohlmann, C. Ramirez-Castro, **A. Balducci** The influence of conductive salt ion selection on EDLC electrolyte characteristics and carbon-electrolyte interaction, Journal of the Electrochemical Society 162 (5) A5020-A5030 (2015)

79.

X. Zhang, R.-S Kühnel, H. Hu, D. Eder, **A. Balducci**, *Going nano with protic ionic liquids – the synthesis of carbon coated Li3V2(PO4)3 nanoparticles encapsulated in a carbon matrix for high power lithium-ion batteries,* Nano Energy, 12, 207-214 (2015)

78.

T. Husch, N. Duygu Yilmazer, **A. Balducci**, M. Korth, *Large-scale virtual high-throughput screening for the identification of new battery electrolyte solvents: computing infrastructure and collective properties,* Physical Chemistry Chemical Physics*, 17, 3394-3401 (2015)*

77.

S. Pohlmann, T. Olyschläger, P.Goodrich, J. Alvarez Vicente, J. Jacquemin, **A. Balducci** *Mixtures of Azepanium based ionic liquids and organic carbonates as high voltage electrolytes for supercapacitors,* Electrochimica Acta, 153, 426-432 (2015)

76.

S. Pohlmann, T. Olyschläger, P.Goodrich, J. Alvarez Vicente, J. Jacquemin, **A. Balducci***, Azepanium based ionic liquids as green electrolytes for high voltage supercapacitors,* Journal of Power Sources, 273, 931-936 (2015)

75.

C. Schütter, C. Ramirez-Castro, M. Oljaca, S. Passerini, M. Winter, **A. Balducci**, *Activated carbon, carbon blacks and graphene based nanoplatelets as active materials for electrochemical double layer capacitors: a comparative study,* Journal of the Electrochemical Society, 162 (1) A44-A51 (2015)

74.

A. Varzi, C. Ramirez-Castro, **A. Balducci**, S. Passerini, *Performance and kinetics of $LiFePO_4$-Carbon bi-material electrodes for hybrid devices: a comparative study between activated carbon and multi-walled carbon nanotubes,* Journal of Power Sources 273, 1016-1022 (2015)

73.

X. Zhang, R.-S Kühnel, S. Passerini, **A. Balducci**, *„Double salt" electrolytes for high voltage electrochemical double layer capacitors* Journal of Solution Chemistry 44, 3, 528-537 (2015)

2014

72.

T. Vogl, S. Menne, **A. Balducci**, *Mixtures of protic ionic liquids and propylene carbonate as advanced electrolytes for lithium-ion batteries,* Physical Chemistry Chemical Physics, 16, (45), 25014 – 25023 (2014)

71.

N. Schirmer, F. Winter, S. F. Matar, **A. Balducci**, R. Pöttgen, *Electronic Structure, Chemical Bonding, and Electrochemical Characterization of Li_2CuSn_2 and Li_2AgSn_2* Zeitschrift für Naturforschung, 69B, 1010-1020 (2014)

70.

X. Zhang, R.-S Kühnel, M. Schroeder, **A. Balducci**, *Revisiting $Li_3V_2(PO_4)_3$ as Anode – An Outstanding Negative Electrode for High Power Energy Storage Devices,* J. Mat. Chem. A, 2, (42), 17906 – 17913 (2014)

69.

C. Ramirez-Castro, C. Schütter, S. Passerini, **A. Balducci,** *On the development of activated carbons with high affinity for high voltage propylene carbonate based electrolytes,* Journal of Power Sources 270, 379-385 (2014)

68.

S. Pohlmann, R.-S Kühnel, T.A. Centeno, **A. Balducci**, *The influence of anion-cation combinations on the chemical-physical properties of advanced electrolytes for supercapacitors and the capacitance of activated carbons,* ChemElectroChem, 1 (8) 1301-1311 (2014)

67.
M. Schroeder, S. Menne, J. Ségalini, D. Saurel, M. Casas-Cabanas, S. Passerini, M. Winter, **A. Balducci,** *Considerations about the influence of the structural and electrochemical properties of carbonaceous materials on the behavior of lithium-ion capacitors,* Journal of Power Sources, 266, 250-258 (2014)

66.
S. Menne, M. Schroeder, T. Vogl, **A. Balducci**, *Carbonaceous anodes for lithium-ion batteries in combination with protic ionic liquids-based electrolytes,* Journal of Power Sources 266, 208-212 (2014)

65.
A. Bhaskar, A. Brandt, **A. Balducci**, U. Rodehorst, S. Menne, M. Winter. *Investigations about the use and the degradation mechanism of* $LiNi_{0.5}Mn_{1.5}O_4$ *in a high power LIC,* Journal of the Electrochemical Society, 161 (6), A1139-A1143 (2014)

64.
T. Vogl, S. Menne, R.-S Kühnel**, A. Balducci,** *The beneficial effect of protic ionic liquids on the lithium environment in electrolytes for battery applications,* J. Mat. Chem. A, 2 (22), 8258 – 8265 (2014)

63.
X. Zhang, N. Böckenfeld, F. Berkemeier, **A. Balducci**, *Ionic-liquid assisted synthesis of nanostructured and carbon-coated* $Li_3V_2(PO_4)_3$ *for high power electrochemical storage devices,* ChemSusChem, 7 (6), 1710-1718 (2014)

62.
R.-S. Kühnel, **A. Balducci**, *Lithium Ion Transport and Solvation in N-Butyl-N-methylpyrrolidinium Bis(trifluoromethanesulfonyl)imide–Propylene Carbonate Mixtures,* The Journal of Physical Chemistry Part C, 118, 5742-5748 (2014)

61.
F. Béguin, V. Presser, **A. Balducci**, E. Frackowiak, *Carbons and Electrolytes for Advanced Supercapacitors,* Advanced Materials, 26, 2219-2251 (2014)

60.
N. Böckenfeld, **A. Balducci**, *Determination of sodium-ion diffusion coefficients in sodium vanadium phosphate,* J. Solid State Electrochem., 18 (4), 959-964 (2014)

59.
F. Grote, R.-S. Kühnel, **A. Balducci**, Y. Lei, *Template Assisted Fabrication of Free-Standing MnO2 Nanotube and Nanowire Arrays and Their Application in Supercapacitors*, Applied Physics Letters 104, 053904 (2014); doi: 10.1063/1.4864285

58.
S. Menne, T. Vogl, **A. Balducci**, *Lithium coordination in protic ionic liquids*, Phys. Chem. Chem. Phys., 16, 5485-5489 (2014)

57.
A. Varzi, **A. Balducci**, S. Passerini, *Natural cellulose: a green alternative to fluorinated binders for high voltage Electrochemical Double Layer Capacitors*, Journal of the Electrochemical Society, 161 (3) A368-A375 (2014)

56.

R.-S. Kühnel, J. Reiter, S. Jeong, S. Passerini, **A. Balducci,** *Anodic stability of aluminum current collectors in an ionic liquid based on the (fluorosulfonyl)(trifluoromethanesulfonyl)imide anion and its implication on high voltage supercapacitors,* Electrochemistry Communication, 38, 117-119 (2014)

55.

A. Brandt, **A. Balducci**, *Theoretical and practical energy limitations of organic and ionic liquid-based electrolytes for high voltage electrochemical double layer capacitors,* Journal of Power Sources, 250, 343-351 (2014)

54.

R.-S Kühnel, **A. Balducci**, *Comparison of the anodic behavior of aluminum current collectors in imide-based ionic liquids and consequences on the stability of high voltage supercapacitors,* Journal of Power Sources, 249, 163-171 (2014)

53.

N. Böckenfeld, **A. Balducci**, *The influence of carbon content on the lithium diffusion and electrochemical properties of lithium vanadium phosphate,* Journal of Applied Electrochemistry, 44, 467-474 (2014)

2013

52.

A. Boisset, S. Menne, J. Jacquemin, **A. Balducci**, M. Anouti, *Deep Eutectic Solvents Based on N-Methylacetamide and Lithium Salt as Suitable Electrolytes for Lithium-Ion Batteries*, Physical Chemistry Chemical Physics, 15, 20054-20063 (2013)

51.

A. Brandt, C. Ramirez-Castro, M. Anouti, **A. Balducci,** *An investigation about the use of mixtures of sulfonium-based ionic liquids and propylene carbonate as electrolytes for supercapacitors,* J. Mat. Chem. A**,** 12669–12678 **(2013)**

50.

S. Pohlmann, B. Lobato, T. A. Centeno, **A. Balducci** *The influence of pore size and surface area of activated carbons on the performance ionic liquid based supercapacitors,* Physical Chemistry Chemical Physics, 15 (40), 17287 - 17294 (2013)

49.

M. Schroeder, P. Isken, M. Winter, S. Passerini, A. Lex-Balducci **A. Balducci** *An investigation on the use of a methacrylate-based gel polymer electrolyte in high power devices,* Journal of the Electrochemical Society 160 (10), A1753-A1758 (2013)

48.

A. Brandt, F. Winter, S. Klamor, F. Berkemeier J.K. Rana, R. Pöttgen , **A. Balducci** *An investigation of the electrochemical delithiation process of carbon coated α-Fe_2O_3 nanoparticles,* J. Mat. Chem. A **,** 1, 11229-11236 (2013)

47.

A. Brandt, J. Pires, M. Anouti, **A. Balducci,** *An investigation about the cycling stability of supercapacitors containing protic ionic liquids as electrolyte components,* Electrochimica Acta, 108, 226-231 (2013)

46.

A. Brandt, **A. Balducci**, *A study about the use of Carbon Coated Iron Oxide-based electrodes in Lithium-ion Capacitors,* Electrochimica Acta, 108, 219-225 (2013)

45.
A. Brandt, S. Pohlmann, A. Varzi, **A. Balducci**, S. Passerini, *Ionic liquids in supercapacitors,* MRS Bulletin, Vol. 38, (2013)

44.
R.-S Kühnel, S. Obeidi, M. Lübke, A. Lex-Balducci, **A. Balducci**, *Evaluation of the wetting time of porous electrodes in electrolytic solutions containing ionic liquid,* Journal of Applied Electrochemistry, 43, 697-704 (2013)

43.
M. Schroeder, M. Winter, S. Passerini, **A. Balducci**, *On the cycling stability of lithium-ion capacitors containing soft carbon as anodic material,* Journal of Power Sources, 235, 398-394 (2013)

42.
S. Pohlmann, **A. Balducci**, *A new conducting salt for high voltage propylene carbonate-based electrochemical double layer capacitors,* Electrochimica Acta, 110, 221-227 (2013)

41.
S. Menne, J. Pires, M. Anouti, **A. Balducci,** *Protic ionic liquids as electrolytes for lithium-ion batteries,* Electrochemistry Communications, 31, 39-41 (2013)

40.
N. Böckenfeld, **A. Balducci**, *On the use of vanadium phosphate in high power devices,* Journal of Power Sources, 235, 265-273 (2013)

39.
N. Böckenfeld, M. Willeke, J. Pires, M. Anouti, **A. Balducci,** *On the use of lithium iron phosphate in combination with protic ionic liquid-based electrolytes,* Journal of the Electrochemical Society 160 (4) A559-A563 (2013)

38.
S. Menne, R.-S. Kühnel, **A. Balducci**, *The influence of the electrochemical and thermal stability of mixtures of ionic liquid and organic carbonate on the performance of high power lithium-ion batteries,* Electrochimica Acta 90, 641– 648 (2013)

37.
J. Pires, L. Timperman, J. Jacquemin, **A. Balducci**, M. Anouti, *Density, conductivity, viscosity, and excess properties of (pyrrolidinium nitrate-based Protic Ionic Liquid + propylene carbonate) binary mixture,* J. Chem. Thermodynamics 59, 10–19 (2013)

36.
A. Brandt, **A. Balducci**, *Ferrocene as Precursor for Carbon-Coated α-Fe_2O_3 Nano-Particles for Rechargeable Lithium Batteries,* Journal of Power Sources, 230, 44-49 (2013)

35.
N. Böckenfeld, S.S. Jeong, M. Winter, S. Passerini, **A. Balducci**, *Natural, cheap and environmentally friendly binder for supercapacitors*, Journal of Power Sources, 221, 14-20 (2013)

2012

34.
A. Brandt, **A. Balducci**, *The influence of pore structure and surface groups on the performance of high voltage electrochemical double layer capacitors containing adiponitrile-based electrolyte*, Journal of the Electrochemical Society, 159(12): A2053-A2059 (2012)

33.
M. Schroeder, M. Winter, S. Passerini, **A. Balducci**, *On the use of soft carbon and propylene carbonate-based electrolytes in lithium-ion capacitors,* Journal of the Electrochemical Society, 159 (8), A1240-A1245 (2012)

32.
R.-S. Kühnel, M. Lübke, M. Winter, S. Passerini, **A. Balducci** *Suppression of aluminum current collector corrosion in ionic liquid containing electrolytes,* Journal of Power Sources, 214, 178-184 (2012)

31.
N. Böckenfeld, T. Placke, M. Winter, S. Passerini, **A. Balducci**, *The influence of activated carbon on the performance of lithium iron phosphate based electrodes,* Electrochimica Acta, 76, 130–136 (2012)

30.
A. Brandt, P. Isken, A. Lex-Balducci, **A. Balducci**, *Adiponitrile-based electrochemical double layer capacitor*, Journal of Power Sources, 204, 213– 219 (2012)

29.
G.T. Kim, S.S Jeong, M. Z. Xue, **A Balducci**, M. Winter, S. Passerini, F. Alessandrini, G. B. Appetecchi, *Development of Ionic Liquid-based Lithium Battery Prototypes,* Journal of Power Sources, 199, 239-246 (2012)

28.
S.S. Jeong, N. Böckenfeld, **A. Balducci**, M. Winter, S. Passerini, *Natural cellulose as binder for lithium battery electrodes*, Journal of Power Sources, 199, 331-335 (2012)

2011

27.
A. Balducci, S.S. Jeong, G.T. Kim, S. Passerini, M. Winter, M. Schmuck, G.B. Appetecchi, R. Marcilla, D. Mecerreyes, V. Barsukov, V. Khomenko, I. Cantero, I. De Meatza, M. Holzapfel, N. Tran, *Development of safe, green and high performance ionic liquids-based batteries (ILLIBATT project),* Journal of Power Sources, 196, (22) 9719-9730 (2011)

26.
A. Krause, P. Kossyrev, M. Oljaca, S. Passerini, M. Winter, **A. Balducci**, *Electrochemical double layer capacitor and lithium-ion capacitor based on carbon black,* Journal of Power Sources, 196, 8836– 8842, (2011)

25.
A. Krause, **A. Balducci**, *High voltage electrochemical double layer capacitor containing mixtures of ionic liquids and organic carbonate as electrolyte,* Electrochem. Commun., 13, 814–817, (2011)

24.
R.-S. Kühnel, N. Böckenfeld, S. Passerini, M. Winter, **A. Balducci**, *Mixtures of ionic liquid and organic electrolyte as safe and high performance electrolyte for lithium-ion batteries,* Electrochimica Acta, 56, 4092–4099, (2011)

23.
N. Böckenfeld, R.-S. Kühnel, S. Passerini, M. Winter, **A. Balducci**, *Composite $LiFePO_4$/AC high rate performance electrodes for Li-Ion capacitors*, Journal of Power Sources, 196, 2, 4136-4142 (2011)

22.
G.T. Kim, S.S. Jeong, M. Joost, E. Rocca, M. Winter, S. Passerini, **A. Balducci**, *Use of natural binders and ionic liquids electrolytes for greener and safer lithium-ion batteries,* Journal of Power Sources, 196, 2187-2194 (2011)

2010-2002

21.
S.F. Lux, S. Jeong, G.T. Kim, S. Passerini, M. Winter, **A. Balducci** *Greener and cheaper batteries containing fluorine-free binder in combination with ionic liquid based electrolytes,* ECS Transactions, 25 (36), 21 (2010).

20.
S.F. Lux, **A. Balducci**, F.M. Schappacher, S. Passerini, M. Winter, *Na-CMC as possible binder for $LiFePO_4$/C composite electrodes: The Role of the drying procedure*, ECS Transactions, 25, 265 (2010)

19.
S.F. Lux, **A. Balducci**, F.M. Schappacher, S. Passerini, M. Winter *Low cost, environmentally begign binders for lithium-ion batteries* Journal of Electrochemical Society, 157 (3) A320-A325 (2010)

18.
G.T. Kim, G.B. Appetecchi, M. Carewska, M. Joost, **A. Balducci**, M. Winter, S. Passerini. *UV cross-linked, lithium-conducting ternary polymer electrolytes containing ionic-liquids*, J. Power Sources, 195 (18) 6130-6137 (2010)

17.
S.F. Lux, M. Schmuck, S. Jeong, S. Passerini, M. Winter, **A. Balducci**. *Performance of Li-ion Battery Anodes in Air-stable and Hydrophobic Ionic Liquid-based electrolyte.* International Journal of Energy Research, 34 (2), 97-106 (2009)

16.
S. F. Lux, M. Schmuck, B. Rupp, W. Kern, G.B. Appetecchi, S. Passerini, M. Winter, **A. Balducci**. *Mixtures of ionic liquids in combination with graphite electrodes: the role of electrolyte additives and Li-salt.* ECS Transactions, 16 (35) 45 (2009)

15.
S.F. Lux, M. Schmuck, G.B. Appetecchi, S. Passerini, M. Winter, **A. Balducci** *Lithium insertion in graphite from ternary ionic liquid - lithium salt electrolyte. II. Specific capacity, cycling stability and cycling efficiency*. J. Power Sources, 192, 2, 606-61 (2009)

14.
G.B. Appetecchi, M. Montanino, **A. Balducci**, S.F. Lux, M. Winter, S. Passerini*Lithium insertion in graphite from ternary ionic liquid - lithium salt electrolyte. I. Electrochemical characterization of the electrolyte.* J. Power Sources, 192, 2, 599-605 (2009)

13.
M. Schmuck, **A. Balducci**, B. Rupp, W. Kern, S. Passerini, M. Winter. *Alloying of electrodeposited silicon with lithium-a principal study of applicability as anode material for lithium ion batteries.* J. Solid State Electrochem., DOI 10.1007/s10008-008-0763-4 (2009)

12.
B. Rupp, M. Schmuck, **A. Balducci**, M. Winter, W. Kern. *Polymer electrolyte for lithium batteries based on photochemically crosslinked Poly(ethylene oxide) and ionic liquid***.** European Polymer Journal, 9 44 (2008) 436

11.

A. Balducci, M. Schmuck, W. Kern, B. Rupp, S. Passerini, M. Winter. *Ionic liquids as electrolyte in lithium batteries: in situ FTIRs studies on the use of electrolyte additives.* ECS Transactions, 11 (29) 109 (2008)

10.

P. Simon, C. Largeot, R. Dugas, A. Balducci, P.L. Taberna, J. Chmiola, C. Portet, G. Yushin and Y. Gogotsi, *Interface Modifications of Carbon-based Supercapacitor Electrodes.* ECS Transaction, 3 (2007) 49 (37)

9.

A. Balducci, R. Dugas, P.L. Taberna, P. Simon, D. Plée, M. Mastragostino, S. Passerini. *High temperature carbon-carbon supercapacitor using ionic liquids as electrolyte.* J. Power Sources, 165 2 (2007) 922-927

8.

C. Arbizzani, **A. Balducci**, M. Mastragostino, S. Passerini, P. Simon, F. Soavi. *Hybrid Supercapacitors with Ionic Liquid Electrolytes*. ECS Transactions, 1 (2006) 55-59

7.

A. Balducci, F. Soavi, M. Mastragostino. *On the use of ionic liquids as solvent-free electrolytes for hybrid supercapacitors.* Appl. Phys. A, 82 (2006) 627-632

6.

A. Balducci, W.A. Henderson, M. Mastragostino, S. Passerini, P. Simon, F. Soavi. *Cycling stability of a hybrid activated carbon// poly(3-methylthiophene) supercapacitor with N-butyl-N-methylpyrrolidinium bis(trifluoromethanesulfonyl)imide ionic liquids as electrolyte.* Electrochim Acta 50 (2005) 2233-2237

5.

A. Balducci, U. Bardi, S. Caporali, M. Mastragostino, F. Soavi. *Ionic liquids for hybrid supercapacitors.* Electrochem. Commun. 6 (2004) 565-570

4.

C. Arbizzani, **A. Balducci**, M. Mastragostino, M. Rossi, F. Soavi. *Lithium-ion batteries based on Li-rich manganese oxide spinels, in New trends in intercalation compounds for energy storage and conversion.* K. Zaghib, C.M. Julien, J. Prakash Eds, The Electrochemical Society Proceedings Series, Pennington (NJ) (2003) 289-293

3.

C. Arbizzani, **A. Balducci**, M. Mastragostino, M. Rossi, F. Soavi. *Characterization and electrochemical performance of Li-rich manganese oxide spinel/ poly(3,4-ethylenedioxythiophene) as the positive electrode fot lithium-ion batteries*. J. Electroanal. Chem. 553 (2003) 125-133

2.

C. Arbizzani, **A. Balducci**, M. Mastragostino, M. Rossi, F. Soavi. *$Li_{1.01}Mn_{1.97}O_4$ surface modification by poly(3,4-ethylenedioxythiophene)*. J. Power Sources 119-121 (2003) 695-700

1.

M. Mastragostino, F. Soavi, C. Arbizzani, **A. Balducci**, *Activated carbon and poly(3-methylthiophene)-based hybrid supercapacitors-Basic studies*. In Electrochemical Capacitors and Hybrid Power Sources, R.J. Brodd et al. Eds., PV2002-7, The Electrochemical Society Proceedings Series, Pennington, NJ (2002) 69-80

Patents and patent applications

1. A. Brandt, **A. Balducci**, S. Passerini and M. Winter *Synthesis of coated-metal oxides from metallocene compounds for application in electrochemical devices,* 2012. Deutsches Patentamt, Aktenzeichen DE 10 2012 100 789.

2. R. Raccichini, A. Varzi, S. Passerini, **A. Balducci**, *Method of producing graphene by exfoliation of graphit* Application, 2014 (*Deutsches Patentamt PCT/EP2014/054232)*

3. L.H. Hess, M. Korth, **A. Balducci** *Acetalischer Elektrolyt* Aktenzeichen DE 10 2017 012 021.8

4. J. Krummacher, C. Schütter, **A. Balducci** *Al(TFSI)3 als Additiv und Leitsalz für elektrochemische Doppelschichtkondensatoren und Hybridspeichersysteme* Aktenzeichen DE 10 2017 012 022.6

5. L. Borchard, D. Leistenschneide, L.H. Hess, **A. Balducci** *Kohlenstoffkompositformteil, Verfahren zu dessen Herstellung und Verwendung des Kohlenstoffkompositformteils in einem elektrochemischen Energiespeiche*

6. L.H. Hess, B. Fähndrich, M. Ostermann, **A. Balducci** *In-situ electrochemical cell for simultaneous thermal analysis*

7. F.A. Kreth, L.H. Hess, M. Ostermann, **A. Balducci** *Method and Apparatus for the characterization of electrochemical devices in their operational timeframe*

8. *P. Zaccagnini, A. Lamberti, S. Porro, **A. Balducci**, Improved supercapacitor current collector and relative preparation method, and a supercapacitor cell comprising said improved supercapacitor current collector*