

# Curriculum vitae Europass

C.V. updated on Nov. 14<sup>th</sup>, 2017



## Personal Information

Name(s) / Surname(s)

Position

Professional address

Electronic mel

Birthday, Nationality

**JOHANSSON Patrik**

Full Professor of Physics, Chalmers University of Technology

Department of Physics, Chalmers, 41296 Göteborg, Sweden

[patrik.johansson@chalmers.se](mailto:patrik.johansson@chalmers.se)

Nov 11<sup>th</sup>, 1969, Swedish

## Diplomas, University Degrees

2005

Docent ("Habilitation") in Physics, Chalmers, Sweden

1998

PhD in Inorganic Chemistry, Uppsala University, Sweden

## Positions held

Jan. 2016 – now

Full Professor of Physics, Chalmers, Sweden. 99% research

Feb. 2012 – Dec. 2015

Professor of Physics, Chalmers, Sweden

Dec. 1999 – Jan. 2012

Various positions: Researcher – Associate Professor, Chalmers, Sweden

Jan. 1999 – Oct. 1999

Post-Doc, Northwestern Univ., Evanston, IL, USA (Profs. Mark Ratner & Duward F. Shriver)

## Admin. Responsibilities

Jan. 2016 – now

Chief Investigator for Chalmers Battery Initiative

Oct. 2012 – now

Deputy Head of Division of Condensed Matter Physics

June 2012 – now

Chairman of the Board, AB Libergreen

Jan. 2012 – now

Chalmers representative in the Swedish Electromobility Centre, theme Energy Storage

Jan. 2011 – Dec. 2015

Leader of the Theory Group / Open Platform within Alistore-ERI

Oct. 2010 – March 2017

Director of the Applied Physics Master Programme, Chalmers

Sept 2005 – now

Reviewer/External expert/advisor for science councils in 10 different countries

## Promotions & Awards

2015

Winner of BASF Open Innovation Contest on Energy Storage. Prize sum: 100000 €

2011

The Royal Society of Arts & Sciences in Gothenburg (KVVS). Writer's scholarship to Grez-sur-Loing

2003

His Swedish Majesty's King Carl XVI Gustaf's 50-years found. Sci., Techn. & Env. Prize sum: 75000 SEK

## Indicators for Research

137

Publications in peer-reviewed international journals (h = 38)

>40

Plenary, Invited and Keynote oral presentations at international conferences

>150

Oral communications and posters at international conferences

6

PhD theses as main supervisor since 2006, 19 Post-docs mentored

5

Book chapters

1

International patent published

## Keywords & of Expertise

Electrolytes, Modelling, Computational Chemistry, Vibrational Spectroscopy

## 10 most cited publications

- 335, 17 p.y. **Spectroscopic and Theoretical Study of (CF<sub>3</sub>SO<sub>2</sub>)<sub>2</sub>N<sup>-</sup> (TFSI) and (CF<sub>3</sub>SO<sub>2</sub>)<sub>2</sub>NH (HTFSI)**  
I. Rey, P. Johansson, J. Lindgren, J.C. Lassègues, J. Grondin and L. Servant  
*J. Phys. Chem. A*, **102**, 3249-3258 (1998)
- 228, 18 p.y. **Spectroscopic characterisation of the conformational states of the bis(trifluoromethanesulfonyl)imide anion (TFSI)**  
M. Herstedt, M. Smirnov, P. Johansson, M. Chami, J. Grondin, L. Servant and J-C. Lassègues,  
*J. Raman Spectroscopy*, **36**, 762-770 (2005)
- 163, 33 p.y. **Towards high energy density sodium ion batteries through electrolyte optimization**  
A. Ponrouch, R. Dedryvère, D. Monti, J. M. Ateba MBA, L. Croguennec, C. Masquelier, P. Johansson and M. R. Palacin, *En. & Env. Sci.*, **6**, 2361-2369 (2013)
- 160, 40 p.y. **A Review of Electrolytes for Lithium-Sulphur Batteries**  
J. Scheers, S. Fantini and P. Johansson, *J. Power Sources*, **255**, 204-218 (2014)
- 153, 17 p.y. **Spectroscopic identification of the lithium ion transporting species in LiTFSI-doped ionic liquids**  
J. C. Lassègues, J. Grondin, C. Aupetit and P. Johansson, *J. Phys. Chem. A*, **113**, 305-314 (2009)
- 146, 13 p.y. **Raman and ab initio study of the conformational isomerism in the 1-ethyl-3-methyl-imidazolium bis(trifluoromethanesulfonyl) imide ionic liquid**  
J. C. Lassègues, J. Grondin, R. Holomb and P. Johansson, *J. Raman Spectroscopy*, **38**, 551-558 (2007)
- 138, 7 p.y. **The Imide Ion: Potential Energy Surface and Geometries**  
P. Johansson, S. P. Gejji, J. Tegenfeldt and J. Lindgren, *Electrochim. Acta*, **43**, 1375-1379 (1998)
- 127, 42 p.y. **Non-Aqueous Electrolytes for Sodium-Ion Batteries**  
A. Ponrouch, D. Monti, A. Boschini, B. Steen, P. Johansson and M. R. Palacin, *J. Mat. Chem. A*, **3**, 22-42 (2015)
- 126, 25 p.y. **Li-O<sub>2</sub> Battery Degradation by Lithium Peroxide (Li<sub>2</sub>O<sub>2</sub>): A Model Study**  
R. Younesi, M. Hahlin, F. Björefors, P. Johansson and K. Edström, *Chem. Mat.*, **25**, 77-84 (2013)
- 103, 26 p.y. **Ionic liquid based electrolytes for sodium-ion batteries: Na<sup>+</sup>- solvation and ionic conductivity**  
D. Monti, E. Jónsson, M. R. Palacin and P. Johansson, *J. Power Sources*, **245**, 630-636 (2014)

## 10 recent publications

- TFSI and TDI Anions – Probes for Solvate Ionic Liquid and Disproportionation-Based Lithium Battery Electrolytes.**  
P. Jankowski, M. Dranka, W. Wiczorek and P. Johansson, *J. Phys. Chem. Lett.*, **8**, 3678-3682 (2017)
- Polymer Electrolytes (Foreword ISPE 2016)**  
P. Johansson and D. Brandell, *Electrochim. Acta*, **247**, 564-568 (2017)
- Stability of sodium electrodes vs. NaTFSI-PEO polymer electrolytes**  
A. Boschini, M. E. Abdelhamid and P. Johansson, *ChemElectroChem*, **4**, 2717-2721 (2017)
- Understanding the lithiation/delithiation mechanism of Si<sub>1-x</sub>Ge<sub>x</sub> alloys**  
L. C. Loaiza, E. Salager, N. Louvain, A. Boulaoued, A. Iadecola, P. Johansson, L. Stievano, V. Seznec and L. Monconduit, *J. Mat. Chem. A*, **5**, 12462-12473 (2017)
- Making the invisible visible**  
P. Johansson, *Nature Energy*, **2**, 17076 (2017)
- On the reliability of half-cell tests for monovalent (Li<sup>+</sup>, Na<sup>+</sup>) and divalent (Mg<sup>2+</sup>, Ca<sup>2+</sup>) cation based batteries**  
D. Tchitchekova, D. Monti, P. Johansson, F. Bardé, A. Randon-Vitanova, M. R. Palacin and A. Ponrouch, *J. Electrochem. Soc.*, **164**, A1384-A1392 (2017)
- Predicting solubility of sulfur: A COSMO-RS based approach to investigate electrolytes for Li-S batteries**  
S. Jeschke and P. Johansson, *Chem. – A Eur. J.*, **23**, 9130-9136 (2017)
- Solvation structure in dilute to highly concentrated electrolytes for lithium-ion and sodium-ion batteries**  
E. Flores, G. Ávall, S. Jeschke and P. Johansson, *Electrochim. Acta*, **233**, 134-141 (2017)
- Comparative investigation of solid electrolyte interphases created by the electrolyte additives vinyl ethylene carbonate and dicyano ketene vinyl ethylene acetal**  
C. Forestier, P. Jankowski, A. Wizner, C. Davoisne, G. Gachot, L. Sannier, S. Grugeon, P. Johansson, M. Armand and S. Laruelle, *J. Power Sources*, **345**, 212-220 (2017)
- Lithium-ion batteries based on SnO<sub>2</sub> electrodes and a LiTFSI-Pip<sub>14</sub>TFSI ionic liquid electrolyte**  
S. Böhme, M. Kerner, J. Scheers, P. Johansson, K. Edström and L. Nyholm, *J. Electrochem. Soc.*, **164**, A701-A708 (2017)