

■ PERSONAL INFORMATION

Family name, First name	Dematteis, Erika Michela	
Researcher unique identifier(s)	ORCID: 0000-0002-3680-4196 Research ID: F-1350-2016	
Contact:	Skype: Erika Michela Dematteis (erhy5th)	
Gender:	Female	
Date of birth:	5 January 1991	
Nationality:	Italian	
URL for web site:	https://www.linkedin.com/in/erika-michela-dematteis-374167131/	
Social pages:	 Research Gate  LinkedIn  Facebook  Twitter  Instagram	

● SHORT CV-BIO

Erika graduated in **Industrial Chemistry** at the University of Turin. At the same university, she got the **PhD title cum laude** on the 19/10/2018. During her studies she had 3 **Erasmus Traineeship mobility periods**, of which 2 at the **Aarhus University (Denmark)** and 1 at the **Helmholtz Zentrum Geesthacht (Germany)**. She had a 1-year Post-Doc Fellowship at the ICMPE (UMR7182), **CNRS-UPEC in Paris (France)**, until the 31/01/2020, involved in the **HyCARE project**, supported by the European Union's Horizon 2020 in the frame of the Fuel Cell Hydrogen Joint Undertaken, she optimised and selected a good material for developing a large-scale renewable hydrogen production and storage integrated plant. **Currently**, she's still involved in the project as a Post-Doc at the University of Turin. During her PhD and postdoc researches, she enhanced her expertise in chemistry, metallurgy and material science, together with a strong industrial-orientated approach and developing valuable and unique soft skills.

● RESEARCH EXPERIENCE AND PRINCIPAL INTEREST

In 2015, following the recently ended SSH2S FCH-JU project (<http://www.ssh2s.eu>), she developed the interest in research activities based on complex hydride for hydrogen storage at the solid-state in the frame of the BOR4STORE FCH-JU project. In the framework of her Master Thesis, combining an exchange period at the Aarhus University, she investigated experimentally eutectic mixture of borohydrides to determine their hydrogenation properties and interaction as a function of temperature and composition, starting from the $\text{LiBH}_4\text{-NaBH}_4$ system, as published in "<http://doi.org/10.1039/C6RA09301A>". The work was expanded to the $\text{LiBH}_4\text{-NaBH}_4\text{-KBH}_4$ system during her PhD and completed with the theoretical assessment of their phase diagram by the Calphad method, published in "<http://doi.org/10.1039/C7CP03816J>". In collaboration with the Helmholtz Zentrum Geesthacht, her research focused on the thermodynamic tailoring of eutectic borohydrides in combination with Reactive Hydride Composite (i.e. Mg_2NiH_4) as described in "<http://doi.org/10.3390/cryst8020090>" and in complex mixtures in the $\text{LiBH}_4\text{-NaBH}_4\text{-KBH}_4\text{-Mg}(\text{BH}_4)_2\text{-Ca}(\text{BH}_4)_2$ system, that evidenced the formation of a quinary borohydride liquid phase for the first time (<https://doi.org/10.1002/cphc.201801130>, <https://doi.org/10.1016/j.ijhydene.2018.05.048> and <https://doi.org/10.3390/en12173230>). The results of her studies were gathered and presented in two recent reviews: a first one from the IEA Task 32 (<https://doi.org/10.1016/j.ijhydene.2018.11.208>) and a second one related to the ECOSTORE Marie Curie ITN H2020 project (<https://doi.org/10.3390/inorganics8030017>), in which she was involved. She furthermore investigated experimentally the above room temperature heat capacity of pure borohydride as reported in <https://doi.org/10.1016/j.jct.2020.106055>, to study possible correlation of thermodynamic properties with ion dynamic and hydrogenation properties. This was possible thanks to a fruitful combination of calorimetric, structural, theoretical approaches and experiments, which were conducted at large scale synchrotron facilities as well. To further deepen the application of complex hydrides as energy materials, she recently focus on closoborane (in collaboration with the Curtin University) and halide-substituted borohydride as solid-state electrolytes (<https://doi.org/10.1021/acs.chemmater.9b01035>).

From 2019, at the CNRS and the University of Turin, she has been involved as a Post-Doc in the HyCARE FCH-JU project, to optimise and select a TiFe-based material for the storage of 50 kg of hydrogen in an integrated energy storage system. She performed synthesis and characterization of substituted TiFe-type intermetallic compound, evidencing improved activation properties and optimum hydrogen storage properties in mild condition of temperature and pressure (<https://doi.org/10.1016/j.jallcom.2020.156075>). Recently she has deepen Open Science topics and she follows an open access publishing approach (both paper: pre-print <https://arxiv.org/abs/2012.00354> and dataset: <https://doi.org/10.5281/zenodo.4299023>; <https://doi.org/10.5281/zenodo.4299000>; [10.5281/zenodo.3772198](https://doi.org/10.5281/zenodo.3772198); [10.5281/zenodo.3772526](https://doi.org/10.5281/zenodo.3772526)).

Detailed description of research outputs and contributes are reported in **Annex A**.

Resume of research output:

- **14 papers** (8 first author, 14 open access) published, 1 Pre-print (Submitted)
- Citations: 145; H-index: 7
- Several **international conferences** attended: presenting 11 Posters and 10 Talks (2 invited)
- 2 prizes: best Master Thesis in Industrial Chemistry, and best presentation at the EMRS Fall meeting 2017
- Member of **scientific societies**, and member of department counsel as student representative
- Involved in many **European projects** (BOR4STORE, ECOSTORE, HyCARE) and Researchers' Nights

Expertise in:

- ✓ Thermodynamic modelling according to the CALPHAD approach (TERMO-CALC software)
- ✓ Experimental study and interpretation of multi-component phase diagrams data
- ✓ **Inorganic and alloy synthesis** (wet-chemistry, reactive ball milling, arc melting, induction furnace)
- ✓ **Sample preparation** (sampling, cutting, etching, polishing, closing silica tube under vacuum or inert atmosphere for thermal treatment)
- ✓ **Advanced multi-technique characterization** methods such as: optical and electronic microscopy, hardness and strength tests, failure analysis
- ✓ Air-sensitive materials manipulation using glove box and Schlenk lines
- ✓ Advanced crystallography (*in-situ* Synchrotron Radiation Powder X-ray and Neutron Diffraction, Rietveld Method)
- ✓ Sievert's method (PCI, TPD)
- ✓ Calorimetry and thermal analysis (HP-DSC, TGA-DSC-MS, TPPA)
- ✓ Strong background in **industrial chemistry, metallurgy, inorganic chemistry and material science**
- ✓ Combining experiments and theoretical approaches
- ✓ Developing, analysing and selecting new promising materials
- ✓ **Industrially-oriented** research for fast development of materials
- ✓ European projects and **network** of leading scientist and companies over Europe, USA and Australia.
- ✓ Writing of **research proposals** for obtaining beamtime at synchrotron facilities (8 performed experiments)
- ✓ **Teaching** in laboratory courses (169 hours performed)
- ✓ Training/**supervising** students (mentor of 6 students)
- ✓ 3 languages: Italian, English, French

• EDUCATION

01/10/2015-19/10/2018	PhD in Material and Chemical Science (XXXI cycle, PhD cum laude) University of Turin, Department of Chemistry and NIS, Torino, Italy Doctoral School of Sciences and Innovative Technologies PhD Supervisor: Prof. Marcello Baricco Thesis: "Thermodynamics of Boron-based Complex Hydrides for Energy Storage" ▪ National Abilitation in Chemistry , Session November 2016.
01/10/2013-21/07/2015	Master Degree in Industrial Chemistry (110/110 magna cum laude) University of Turin, Department of Chemistry and NIS, Torino, Italy MSc Supervisor: Prof. Marcello Baricco Thesis: "Thermodynamic investigation of borohydrides eutectic mixtures for hydrogen storage application"
01/10/2010-16/10/2013	Bachelor Degree in Industrial Chemistry (109/110) University of Turin, Department of Chemistry and NIS, Torino, Italy MSc Supervisor: Prof. Livio Battezzati Thesis: "Failure Analysis of metallic components by metallographic and analytical techniques" after 2 months internship at MTC s.r.l., MotivexLab, Avigliana, Italy

• CURRENT POSITION

01/02/2020-31/01/2021	Post-doctoral Research Fellow INSTM, University of Turin, Department of Chemistry and NIS, Torino, Italy Project: "Materials for hydrogen storage", and "HyCARE"
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● **PREVIOUS POSITIONS**

01/02/2019-31/01/2020	<p>Post-doctoral Research Fellow ICMPE (UMR7182), CNRS, UPEC, Thiais (Paris), France Project: “HyCARE: Hydrogen CARRIER for Renewable Energy storage” <i>Optimisation and selection of a good material for developing a large-scale renewable hydrogen production and storage integrated plant.</i></p>
01/10/2018-31/01/2019	<p>Post-doctoral Research Fellow University of Turin, Department of Chemistry and NIS, Torino, Italy Project: “Complex Hydrides for Energy Storage”</p>
05/01/2007-30/09/2015	<p>Cashier and Assistant Minimarket Daimo Paola, Via San Michele 127, 10094 Giaveno (TO), Italy <i>Organisation and replenishment of the various shelves and merchandise for sale; cleaning, inventory compilation, realization of shop windows. Help at the cashier, and during storage and replenishment.</i></p>
25/03/2013-25/05/2013	<p>Quality Control MTC s.r.l., Via M. Gandhi, 13/d, 10051 Avigliana (TO), Italy - (http://motivexlab.com/) <i>Cutting and Rectification of metal sheets, use of cropper for the preparation of the tensile test specimens, embedding and polishing of metallographic specimens. Tensile tests. Analysis of microstructures and failure analysis of fracture surfaces (OM, SEM-EDS), determination of chemical composition (quantometer), hardness tests, micro hardness (also sewing and welding analysis), ultrasound, determination of thicknesses, analysis of accelerated aging and corrosion (moist and salt room), analyses of cracks with magnetic particles. Writing of reports for certified analysis, update and writing of manuals.</i></p>
29/06/2009-17/07/2009	<p>Technical Analyst Hospital ASL TO 3, Via Seminario, 45, 10094 Giaveno (TO), Italy <i>Assisting in the preparation of specimens, analysis, labelling tubes. Assist during blood tests and analysis, microscopic observation of specimens for analysis of feces and urine, making protein frameworks, catecholamines and other analyses carried out with electrophoresis.</i></p>

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
PET (B1, with merit), FCE (B2, grade C)					
French	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
French	B1	B1	A2	A2	A1

Communication skills Good communication skills gained through the experience as sales manager. Good communication skills considering both writing and speaking. These competencies have been enhanced thanks to the involvement in an international network and collaborations, the description of research activities and the discussion of perspectives during both internal project meetings and international conferences.

Organisational / managerial skills Know how to work considering timing, goals and priorities given by the project coordinators. Good skills developed in the management of written reports, proposals and organizational issues related to European projects or proposals to access to synchrotron facilities, and projects for young people in local parishes. Skills in coordination of small group of people and to be a reference for younger students inside the laboratory.

Job-related skills

Expertise in thermodynamic modelling according to the Calphad approach and in the experimental study and interpretation of multi component phase diagrams data. Good know-how in the synthesis of inorganic compounds or alloys (ball milling, arc melting, induction furnace), the preparation (sampling, cutting, etching, polishing, closing silica tube under vacuum or inert atmosphere for thermal treatment) and analysis (optical microscopy, hardness and strength tests, failure analysis) of metallographic samples. Expertise in calorimetric and diffraction techniques. Know-how in air-sensitive materials manipulation using glove box and Schlenk lines. Knowledge and supporter of Open Science (looking forward being an Open Science Ambassador).

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient	Proficient	Independent	Proficient	Independent
ECDL full				

Broad and basic informatics experience both at the hardware and at the software level. Knowledge on Windows system, and competence with main Microsoft Office tools (word processor, spread sheet, presentation software), Google Suite tools (Gmail, Google Drive, etc.), and with other scientific software able to manage worksheets (ORIGIN, Igor), bibliography management software (Mendeley), X-ray diffraction editing and refinement programs (MAUD, FullProf, FIT2D), crystallographic databases, computational thermodynamic program (TERMO-CALC), data repository (Zenodo). Good competence of online tools for web-call or remote control (Skype, Zoom, Google Meet, Microsoft Teams, Webex, TeamViewer, AnyDesk). Basic know-how in picture, photo and video editing software gained as an amateur photographer (Adobe Illustrator, Pinnacle studio). Independent and proficient use of social network/website and generation of social contents (Wordpress, Facebook, Twitter, LinkedIn, Instagram, ResearchGate, YouTube, MailChimp), and management tools for open science.

ADDITIONAL INFORMATION

Annex A integrates in details the CV of the candidate showing all the research relevant activities performed. From an applicative and industrial point of view it demonstrates how the candidate is active, her attitude to learn fast and pursue her goals and objectives to then publish and communicate the results of her work and research towards different audiences. The candidate's best value is the ability of being easily integrated in any material/mechanical related fields because of her deep knowledge on systems and materials.

ANNEX A

● FELLOWSHIPS AND AWARDS - From most recent to oldest

08/2020- <i>to be defined</i>	6-months PostDoc fellowship at the Curtin University, Perth, Australia. Currently on hold for the corona virus pandemic, starting date to be defined. Funding: 8.3 K\$/mo (fellow gross salary)
23/09/2020	Selected among the 10 Finalists of the IX° National Prize of popularization of science “GiovediScienza”, Italy
01/02/2020-31/01/2021	INSTM Post-doctoral Research Fellowship to fund research at the Department of Chemistry, University of Turin, Italy. Project: “Materials for hydrogen storage”. Funding: 14 K€/yr (fellow net salary).
01/02/2019-31/01/2020	FHC-JU Post-doctoral Research Fellowship to fund research at ICMPE, CNRS, Thiais (Paris), France. Project: “HyCARE”. Funding: 27 K€/yr (fellow net salary).
01/10/2018-31/01/2019 & 01/10/2015-01/10/2018	Italian Ministerial PostDoc & PhD Fellowship to fund research at the Department of Chemistry, University of Turin, Italy. Project: “Thermodynamics of Boron-based Complex Hydrides for Energy Storage”. Funding: 17 K€/yr (net fellow salary).
01/03/2017-02/05/2017	Erasmus Traineeship Fellowship for mobility period at Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research, Geesthacht, Germany Project: “Experimental investigation of complex mixtures of borohydrides for hydrogen storage”. Funding: 400 €/mo (mobility support)
25/05/2016-30/08/2016	Erasmus Traineeship Fellowship for mobility period at Aarhus University, Aarhus, Denmark Project: “Synthesis and characterization of complex hydrides for energy storage (hydrogen storage and batteries)”. Funding: 450 €/mo (mobility support)
02/03/2015-19/06/2015	Erasmus Traineeship Fellowship for mobility period at Aarhus University, Aarhus, Denmark Project: “Experimental investigation of the thermodynamic properties of eutectic borohydrides for hydrogen storage”. Funding: 450 €/mo (mobility support)
20/09/2017	Award “Best student oral presentation of symposium C”, EMRS, Fall Meeting 2017, Warsaw University of Technology, Poland – Award: 200 €
16/05/2017	Award “Best Master Thesis in Industrial Chemistry, Academic year 2014/2015”, University of Turin, Italy

● SUPERVISION OF GRADUATE STUDENTS - From most recent to oldest

2019	Mentor of 1 visiting PhD Student at ICMPE (UMR7182), CNRS, UPEC, Thiais (Paris), France - David Dreistadt
2016-2018	Tutor of 1 BSc, 3 MSc and 1 international internship student during their thesis work at University of Turin, Department of Chemistry and NIS, Torino, Italy - Sofia Sturari - Valerio Gulino - Jussara Barale - Umberto Spaliviero - Silvère Vaunois

• TEACHING ACTIVITIES - From most recent to oldest

15/10-14/12/2018	“Laboratory of Inorganic Chemistry”, BSc Degree in Chemistry, University of Turin, Italy (48h laboratory lessons, ca. 60 students)
07/06/2018	“Optimization and computation of thermodynamic proprieties and phase diagrams”, PhD Course in Chemical and Material Science, University of Turin (4h tutoring of hands-on session, ca. 10 students)
23/10-03/11/2017	“Laboratory of Inorganic Chemistry”, BSc Degree in Chemistry, University of Turin, Italy (40h laboratory lessons, ca. 60 students)
24-25/05/2017	“Polymeric materials Laboratory”, MSc Degree in Forensic and Sports Clinical Chemistry, University of Turin, Italy (10h laboratory lessons, ca. 20 students)
15-23/05/2017	“Metallic materials Laboratory”, BSc Degree in Material Science, University of Turin, Italy (30h laboratory lessons, ca. 30 students)
16-24/05/2016	“Metallic materials Laboratory”, BSc Degree in Material Science, University of Turin, Italy (37h laboratory lessons, ca. 30 students)

• ORGANISATION OF SCIENTIFIC MEETINGS - From most recent to oldest

2021	Gordon Research Seminars on Hydrogen-Metal System 2021, Switzerland
13-14/06/2019	Local organisation committee of: "The Second French-Australian Energy Symposium", Le Croisic (Nantes), France, (ca. 40 participants)
15-18/04/2018	Local organisation committee of: "International Hydrogen Energy Agency meeting (IHEA), TASK32 meeting", San Servolo (Venice), Italy (ca. 30 participants)

• INSTITUTIONAL RESPONSIBILITIES - From most recent to oldest

2021	Elected Chair and organiser of the Gordon Research Seminars on Hydrogen-Metal System 2021, Switzerland
2010-2018	Faculty member as representative of BSc, MSc and PhD students at the Department of Chemistry, University of Turin, Italy
24/11/2017	Organizer of the Internal Seminar: "Gender equality: don't change women, change the system", Department of Chemistry, University of Turin, Turin, Italy (ca. 20 participants)
2010-2015	Member of the faculty didactical committee for BSc and MSc degree in Industrial Chemistry, University of Turin, Italy

• REVIEWING ACTIVITIES

2020	Review of 3 articles (1 for JALCOM, 1 for Materials, 1 for Energies)
2019	Review of 1 article (1 for IJHE)
2018	Review of 1 article (1 for JALCOM)

• MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2015-2016	Member of AIM – Italian Metallurgy Association
2015-2016	Member of SCI – Italian Chemical Society

• MAJOR COLLABORATIONS

<i>Collaboration with Academic Research Institutions</i>	<i>Topic</i>
<p>Prof. Marcello Baricco, Prof. Paola Rizzi, Prof. Mauro Palumbo, Prof. Livio Battezzati, Dr. Gianluca Fiore (MET Group); Prof. Silvia Bordiga, Prof. Elena Groppo, Dr. Matteo Signorile, Prof. Giuseppe Spoto, Dr. Lorenzo Mino (SURFIN Group); Prof. Piero Ugliengo, Dr. Marta Corno (TEO Group) - Department of Chemistry, University of Turin, Italy</p>	<p>Metallurgical synthesis and characterizations Spectroscopic characterisation of materials <i>Ab-Initio</i> Calculations (DFT)</p>
<p>Prof. Torben Renè Jensen, Dr. Bo Richter, Prof. Mogens Christensen – Department of Chemistry and Centre for Materials Crystallography, Aarhus University, Denmark</p>	<p>Synthesis and advance structural characterization of complex hydrides (borohydrides)</p>
<p>Prof. Martin Dornheim, Dr. Claudio Pistidda, Prof. Thomas Klassen – Department of Nanotechnology, Helmholtz-Zentrum Geesthacht, Germany</p>	<p>Reactive ball milling and in-situ synchrotron radiation x-ray diffraction of metal and complex hydrides</p>
<p>Dr. Mark Paskevicius – Fuels and Energy Technology Institute, Curtin University, Australia</p>	<p>Synthesis and multi-technique characterization of closo-boranes</p>
<p>Dr. Michel Latroche, Dr. Fermin Cuevas, Dr. Jean-Marc Joubert – ICMPE, CNRS, France</p>	<p>CALPHAD method, synthesis and multi-technique characterization of metal and complex hydrides</p>
<i>Collaborative International Networks of EU Projects involving the ER</i>	<i>Project Title</i>
<p>BOR4STORE FCH-JU Grant agreement 303428: www.hzg.de/mw/bor4store EMPA (CH), Abengoa Hidrogeno (ES), Institute for Energy Technology (NO), KatChem (CZ), Helmholtz-Zentrum Geesthacht (DE), National Centre for Scientific Research "Demokritos" (GR), Università di Torino NIS (IT), University of Aarhus (DK), ZOZ GmbH (DE).</p>	<p>Fast, reliable and cost-effective boron hydride based high capacity solid state hydrogen storage materials</p>
<p>ECOSTORE ITN: www.hzg.de/ms/ecostore CNRS (FR), Helmholtz-Zentrum Geesthacht (DE), Institute for Energy Technology (NO), National Centre for Scientific Research "Demokritos" (GR), Rockwood Lithium GmbH (DE), SAFT SAS (FR), Università di Torino NIS (IT), Université de Genève (CH), University of Aarhus (DK), University of Southern Denmark (DK), University of Birmingham (UK), University of Stuttgart (DE), ZOZ GmbH (DE), Tohoku University (Japan) Kyushu University (Japan).</p>	<p>Novel Complex Metal Hydrides for Efficient and Compact Storage of Renewable Energy as Hydrogen and Electricity</p>
<p>HyCARE FCH-JU Grant agreement 826352: http://hycare-project.eu University of Turin (IT), ENGIE Lab CRIGEN (FR), GKN Sinter (DE), Tecnodelta s.r.l. (IT), Stühff GmbH (DE), Fondazione Bruno Kessler (IT), Helmholtz-Zentrum Geesthacht (DE), CNRS (FR), Institut for Energiteknikk (NO), Environment Park S.p.A. (IT)</p>	<p>Hydrogen Carrier for Renewable Energy Storage</p>

• EXPERIMENTS AT LARGE SCALE SYNCHROTRON FACILITIES - From oldest to most recent

2015-2018	6 beamtime at: MaxLab (Lund, Sweden), Diamond (Didcot, UK), ESRF (Grenoble, France); PETRA (Hamburg, Germany), of which: 3 beamtime proposed by the ER and accepted after peer-reviewed proposal submission (at ESRF and PETRA)
2019-2020	2 neutron beamtime proposed by the ER and accepted after peer-reviewed proposal submission at ILL (Grenoble, France https://doi.ill.fr/10.5291/ILL-DATA.5-22-771) and ISIS (Didcot, UK https://data.isis.stfc.ac.uk/doi/STUDY/108681923)

● LIST OF PUBLICATIONS - From most recent to oldest

Publication summary

14 peer-reviewed articles on international (ISI) journal, of which 1 conference proceeding, 1 Viewpoint, 5 in special issues, 14 open access, 8 as 1st author.

Bibliometric Indexes

ISI Google Scholar, updated 09/12/2020

Sum of Times Cited = 145

h-index = 7

Articles on international (ISI) journals with IF updated 29/10/2020

1. **Dematteis, E.M.***, Dreistadt D. M., Capurso G., Jepsen J., Cuevas F., Latroche M. – “Fundamental hydrogen storage properties of TiFe-alloy with partial substitution of Fe by Ti and Mn” – **Pre-print**: <https://arxiv.org/abs/2012.00354> - Submitted.
Datasets: <https://doi.org/10.5281/zenodo.4299023>; <https://doi.org/10.5281/zenodo.4299000>
2. **Dematteis, E.M.***, Cuevas F., Latroche M. – “Hydrogen storage properties of Mn and Cu for Fe substitution in TiFe_{0.9} intermetallic compound” – JALCOM, 2021, 851, 156075. **Green Open Access** | <https://doi.org/10.1016/j.jallcom.2020.156075> | IF: 4.650
Datasets: [10.5281/zenodo.3772198](https://doi.org/10.5281/zenodo.3772198); [10.5281/zenodo.3772526](https://doi.org/10.5281/zenodo.3772526)
3. Bannenberg L.J., Heere M., Benzidi H., Montero J., **Dematteis E. M.**, Suwarno S., Jaroń T., Winny M., Orłowski P.A., Wegner W., Starobrat A., Fijałkowski K.J., Grochala W., Qian Z., Bonnet J.-P., Nuta I., Lohstroh W., Zlotea C., Mounkachi O., Cuevas F., Chatillon C., Latroche M., Fichtner M., Baricco M., Hauback B.C., El Kharbachi A. – “Metal (boro-) hydrides for high energy density storage and relevant emerging technologies” – IJHE, 2020, 45 (58) 33687-33730. **Green Open Access** | <https://doi.org/10.1016/j.ijhydene.2020.08.119> | IF: 4.939
4. Barale, J., Deledda, S., **Dematteis, E.M.**, Sørby M.H., Baricco M., Hauback B.C. – “Synthesis and characterization of Magnesium-Iron-Cobalt complex hydrides.” – Sci. Rep, 2020, 10, 9000. **Open Access** | <https://doi.org/10.1038/s41598-020-65774-8> | IF: 3.998
5. El Kharbachi A., **Dematteis E. M.**, Shinzato K., Stevenson S. C., Bannenberg L. J., Heere M., Zlotea C., Szilágyi P. Á., Bonnet J.-P., Grochala W., Gregory D. H., Ichikawa T., Baricco M., Hauback B. C. – “Metal Hydrides and Related Materials. Energy Carriers for Novel Hydrogen and Electrochemical Storage” – JPPC, 2020, 124, 14, 7599-7607. **Open Access** | **Viewpoint** | <https://dx.doi.org/10.1021/acs.jpcc.0c01806> | IF: 4.189
6. Hadjixenophontos, E.; **Dematteis, E.M.**; Berti, N.; Wołczyk, A.R.; Huen, P.; Brighi, M.; Le, T.T.; Santoru, A.; Payandeh, S.; Peru, F.; Dao, A.H.; Liu, Y.; Heere, M. – “A Review of the MSCA ITN ECOSTORE - Novel Complex Metal Hydrides for Efficient and Compact Storage of Renewable Energy as Hydrogen and Electricity”, Inorganics, 2020, 8(3), 17. **Open Access** | **Special Issue** Beyond Hydrogen Storage - Metal Hydrides as Multifunctional Materials for Energy Storage and Conversion | <https://doi.org/10.3390/inorganics8030017> | IF: 2.600
7. **Dematteis E. M.**, Jensen S.R., Jensen T.R., Baricco M. – “Heat capacity and thermodynamic properties of alkali and alkali-earth borohydrides” – The Journal of Chemical Thermodynamics, 2020, 143, 106055. **Green Open Access** | <https://doi.org/10.1016/j.jct.2020.106055> | IF: 2.888
8. **Dematteis E. M.**, Baricco M. – “Hydrogen Desorption in Mg(BH₄)₂-Ca(BH₄)₂ System” – Energies, 2019, 12(17), 3230. **Open Access** | **Special Issue** Fundamental and Applied Hydrogen Storage Materials Development | <https://doi.org/10.3390/en12173230> | IF: 2.707
9. Gulino V., Brighi M., **Dematteis E. M.**, Murgia F., Nervi C., Černý R., Baricco M. - “Phase Stability and Fast Ion Conductivity in the Hexagonal LiBH₄-LiBr-LiCl Solid Solution”, Chemistry of Materials, 2019, 31, 14, 5133-5144. **Green Open Access** | <https://doi.org/10.1021/acs.chemmater.9b01035> | IF: 9.567
10. **Dematteis E. M.**, Pistidda C., Dornheim M., Baricco M. - “Exploring Ternary and Quaternary Mixtures in the LiBH₄-NaBH₄-KBH₄-Mg(BH₄)₂-Ca(BH₄)₂ System”, ChemPhysChem, 2019, 20 (10), 1348-1359. **Green Open Access** | **Special Issue** Hydrogen Energy | <https://doi.org/10.1002/cphc.201801130> | IF: 3.144
11. Milanese C., Jensen T. R., Hauback B., Pistidda C., Dornheim M., Yang H., Lombardo L., Zuetzel A., Filinchuk Y., Ngene P., De Jongh P., Buckley C., **Dematteis E. M.**, Baricco M. - "Complex Hydrides for Energy Storage", IJHE, 2019, 44 (15) 7860-7874. **Green Open Access** | **Special Issue** on hydrogen-based Energy storage | <https://doi.org/10.1016/j.ijhydene.2018.11.208> | IF: 4.939
12. **Dematteis, E. M.**, Santoru, A., Poletti, M. G., Pistidda, C., Klassen, T., Dornheim, M., Baricco, M. – “Phase stability and hydrogen desorption in a quinary equimolar mixture of light-metals borohydrides” – IJHE, 2018, 43 (34), 16793-16803. **Green Open Access** | **Proceedings** of the EMRS Fall Meeting 2017 | <https://doi.org/10.1016/j.ijhydene.2018.05.048> | IF: 4.939
13. **Dematteis, E. M.**, Vaunois, S., Pistidda, C., Dornheim, M., Baricco, M. – “Reactive Hydride Composite of Mg₂NiH₄ with Borohydrides Eutectic Mixtures” - Crystals 2018, 8 (2), 90. **Open Access**. | **Special Issue** Properties and Applications of Novel Light Metal Hydrides | <http://doi.org/10.3390/cryst8020090> | IF: 2.404
14. **Dematteis, E. M.**, Pinatel, E. R., Corno, M., Jensen, T. R., Baricco, M. - “Phase diagrams in the LiBH₄-NaBH₄-KBH₄ system.” - PCCP, 2017, 19, 25071-25079. **Green Open Access** | <http://doi.org/10.1039/C7CP03816J> | IF: 3.430

15. **Dematteis, E. M.**, Roedern, E., Pinatel, E. R., Corno, M., Jensen, T. R., & Baricco, M. - "A thermodynamic investigation of the LiBH₄-NaBH₄ system." - RSC Adv., **2016**, 6 (65), 60101–60108. **Open Access.** | <http://doi.org/10.1039/C6RA09301A> | IF: 3.119

● **CONTRIBUTIONS TO CONGRESS - From oldest to most recent**

Posters (presenting author is underlined)

1. **Dematteis, E. M.**, et al. - "Thermodynamic investigation of the LiBH₄-NaBH₄ system." - 44th Danish Crystallographers & 7th DanScatt Annual Meeting, Denmark, Aarhus University, 28-29/05/2015
2. Albanese E., **Dematteis E. M.**, Pinatel E.R., et al. - "Bor4store @ UNITO" - BOR4STORE Closing Meeting, Instituto Cervantes, Hamburg, Germany, 28-29/09/2015
3. **Dematteis, E. M.**, Roedern, E., Pinatel, E. R., Corno, M., Jensen, T. R., Baricco, M. - "Experimental and computational investigations on the LiBH₄-NaBH₄ system" - 8èmes Journées Franco-Italiennes de Chimie / 80 Giornate Italo-Francesi di Chimica, France, Université d'Avignon, 25-26/04/2016
4. **Dematteis, E. M.**, Pinatel, E. R., Corno, M., Jensen, T. R., Baricco, M. - "LiBH₄-NaBH₄-KBH₄ pseudo-ternary system: experimental investigations and modelling" - HyDem 2016, Denmark, Aarhus University, 1-3/06/2016
5. **Dematteis, E. M.**, et al. - "A first experimental and theoretical modelling of thermodynamic properties of pseudo-ternary LiBH₄-NaBH₄-KBH₄ system" - MH2016, Switzerland, Interlaken, 7-12/08/2016
6. Baricco M., Wolczyk A., **Dematteis E. M.**, Belmonte N., Marano E., Castellero A., Rizzi P. - "Hydrides for Energy Storage"- Materials.it 2016, Italy, Catania, 12-16/12/2016
7. **Dematteis E. M.**, et al. - "Above room temperature heat capacity of alkali and alkaline earth borohydrides" - Gordon Research Seminar on Hydrogen-Metal System 2017, USA, Boston (MA), 15-16/07/2017
8. **Dematteis, E. M.**, Santoru A., Pistidda C., Dornheim M., Baricco, M. - "Toward high entropy complex hydrides" - Gordon Research Conference on Hydrogen-Metal System 2017, USA, Boston (MA), 16-21/07/2017
9. **Dematteis, E. M.**, Nervi, C., et al. - "Development of solid-state electrolytes by anion substitutions in lithium borohydride" - Giornate dell'elettrochimica italiana - GEI 2018, 21-25/01/2018, Sestriere, Torino, Italy
10. Gulino, V., **Dematteis, E. M.**, et al. - "Development of solid-state electrolytes by anion substitutions in lithium borohydride"-1st Intern. Symposium on Solid-State Batteries, 28-29/05/2018, EMPA, Dübendorf, Switzerland.
11. Barale J., Deledda S., **Dematteis E. M.**, Sørby M.H., Baricco M., Hauback B.C.- "Synthesis and Characterization of Magnesium-Iron-Cobalt Complex Hydrides" - 1st Workshop on Mechanochemistry of Metal Hydride—University of Oslo, Science Park Oslo, Norway, 30/05-01/06/2018.
12. **Dematteis, E. M.**, et al. - "Solubility in Borohydrides: Role of Thermal Treatment in Mechanochemistry" - 1st Workshop on Mechanochemistry of Metal Hydride—University of Oslo, Oslo, Norway, 30/05-01/06/2018.
13. **Dematteis E. M.**, Gulino V., Scaglione F., et al. - "Solubility in nanostructured Borohydrides prepared by Mechanochemistry" - NanoInnovation - Materiali Nanofasici 2018, Rome, Italy, 11-14/09/2018.
14. Gulino V., Brighi M., **Dematteis E. M.**, Murgia F., Nervi C., Cerny R., Baricco M. - "Phase Stability and Fast Ion Conductivity in the Hexagonal LiBH₄-LiBr-LiCl Solid Solution" - Gordon Research Seminar on Hydrogen-Metal System 2019, Spain, Castelldefels, 29-30/06/2019
15. Barale J., **Dematteis E. M.**, et al. - "Synthesis and Characterization of Magnesium-Iron-Cobalt Complex Hydrides" - Gordon Research Seminar on Hydrogen-Metal System 2019, Spain, Castelldefels, 29-30/06/2019
16. **Dematteis E. M.**, et al. - "HyCARE: Hydrogen CARRIER for Renewable Energy storage" - Gordon Research Conference on Hydrogen-Metal System 2019, Spain, Castelldefels, 30/06/2019-05/07/2019
17. **Dematteis E. M.**, et al. - "HyCARE: Hydrogen CARRIER for Renewable Energy storage" - Annual School on Neutron Diffraction Data Treatment using the FullProf Suite, ILL, Grenoble, France, 21-26/10/2019
18. **Dematteis E. M.**, et al. - "HyCARE: Hydrogen CARRIER for Renewable Energy storage" - #RSCPoster Twitter Conference - 03/03/2020
19. **Dematteis E. M.**, et al. - "HyCARE: Hydrogen CARRIER for Renewable Energy storage" - First Materials MDPI Poster Competition, on Twitter - 05/09/2020

Talks (presenting author is underlined)

1. Pinatel E. R., **Dematteis E. M.**, Baricco M., et al. - ISHE2016, 10th int. Symposium hydrogen Energy, Japan, Sendai, 21-25/02/2016 - "Assessment of phase diagrams in complex hydrides"
2. **Dematteis E. M.**, Wolczyk A., Corno M., Rizzi P., Castellero A., Baricco M. - AIMAT2016 & SIB2016, Italy, Ischia Porto, 13-15/07/2016 - "Assessment of phase diagrams in complex hydrides"
3. Baricco M., Wolczyk A. R., **Dematteis E. M.**, et al. - Thematic Meeting "Materials for Energy", Institute for Complex Systems, Italy, Rome, 09/09/2016 - "Hydrides for Energy Storage"
4. **Dematteis, E. M.**, Pinatel, E. R., Corno, M., Jensen, T. R., Baricco, M. - To.Ska.Lake Summer School - Total Scattering for Nanotechnology - Italy, Como (CO), 02/06/2017 - "Coupling Synchrotron Radiation Powder X-Ray Diffraction and Thermodynamic modelling on Complex Hydrides for Energy Storage"
5. **Dematteis, E. M.**, Metallurgy Lab. Seminar, Dep.t of Chemistry, UNITO - Italy, Turin (TO), 09/06/2017 - "Experimental investigation and thermodynamic modelling of mixtures of borohydrides for energy storage"
6. **Dematteis E. M.**, Jensen S. R., Jensen T. R., Baricco M. - EMRS, Fall Meeting 2017, Warsaw University of

- Technology, Poland, 18-21/09/2017 - “Heat capacity and Thermodynamic properties of borohydrides” - *Awarded: Best student oral presentation of symposium C.*
7. **Dematteis E. M.**, et al. - CIMTEC 2018 -8th Forum on New Materials, Perugia (Italy), Symposium FC - “Thermodynamic Stability of Multi-Cation Complex Hydrides”, 13/06/2018.
 8. **Dematteis E. M.**, et al. - International Symposium on Metal-Hydrogen Systems, Guangzhou, China - “Polymorphic Transitions in Closo-Boranes”, 29/10/2018
 9. **Dematteis E. M.**, et al. - GDR -HySPaC (STOPHE), Le Croisic (Nantes), France, 11-13/06/2019 - “Mn and Cu substitutions in TiFe intermetallic compounds for large-scale hydrogen storage”
 10. **Dematteis E. M.**, Berti N., Bornemann N., Neumann B., Baricco M., Cuevas F., Latroche M. - Gordon Research Seminars on Hydrogen-Metal System 2019, Spain, Castelldefels, 29-30/06/2019 - “Towards large-scale hydrogen storage in TiFe intermetallic compounds: state of art and outlook” - *Invited talk*
 11. **Dematteis E. M.**, et al. - EMRS, Fall Meeting 2019, Warsaw University of Technology, Poland, 16-19/09/2019 - “Substituted FeTi intermetallic compounds: towards large-scale hydrogen storage”
 12. **Dematteis E. M.**, Cuevas F., Latroche M. - International Renewable and Sustainable Energy Conference (IRSEC19), Agadir, Morocco, 27-30/11/2019 - “Hydrogen storage properties of Mn and Cu substituted TiFe intermetallic compounds” - *Invited talk*
 13. **Testi M. Dematteis E. M.**, et al. - European Fuel Cell Technology & Applications Conference - Piero Lunghi Conference, Naples, Italy 9-11/12/2019 - “HyCARE: Hydrogen Carrier for renewable energy storage”
 14. **Dematteis E. M.**, Cuevas F., Latroche M. - Seminar at the M2I Department, ICMPE, CNRS, Thiais, France, 14/01/2020 - “TiFe-based intermetallic compounds for large-scale hydrogen storage”

● CONTRIBUTIONS TO PROJECTS - *From oldest to most recent*

Deliverables & Milestones

1. **Dematteis, E. M.**, Cuevas F., Latroche M. - “Optimized alloy composition” - HyCARE Deliverable 2.1 - 29/06/2019 - Confidential - Resume: <https://doi.org/10.5281/zenodo.3712826>
2. **Dematteis, E. M.**, Cuevas F., Latroche M. - “Selected alloy characterisation” - HyCARE Deliverable 2.2 - 30/09/2019 - Confidential - Resume: <https://doi.org/10.5281/zenodo.3712848>
3. **Dematteis, E. M.**, Cuevas F., Latroche M. - “Selected alloy” - HyCARE Milestones 2 - 02/10/2019
4. **Dematteis, E. M.**, Cuevas F., Latroche M. - “Processing parameters” - HyCARE Deliverable 2.3 - 31/12/2019 - Confidential - Resume: <https://doi.org/10.5281/zenodo.3712857>

● CONTRIBUTIONS TO DISSEMINATION & COMMUNICATION ACTIVITIES

1. **EUROPEAN RESEARCHERS' NIGHT (MSCA)**: <https://www.nottedeiricercatori.it>
 - a. 2014, 2015, 2016, 2017: with Prof. Marco Ginpro: “Scommettiamo sulla chimica?”
<https://scienzedidattica.wordpress.com/2014/09/20/la-notte-dei-ricercatori-2014>
<https://scienzedidattica.wordpress.com/2015/09/15/notte-europea-dei-ricercatori-2015>
<http://nottedeiricercatori.piemontevalledaosta.it/stand/scommettiamo-sulla-chimica>
 - b. 2020: with Prof. Marcello Baricco and Prof. Paola Rizzi:
<https://www.unito.it/ateneo/gli-speciali/notte-europea-delle-ricercatrici-e-dei-ricercatori-2020>
 - “Good Morning Torino”: Il rally dell’Idrogeno - for secondary schools (3 classes, 11-12 years old) - <https://www.icazeglio.gov.it/rally-idrogeno>
 - “Finestre sulla ricerca”: Il progetto HyCARE - Online video & chat - <https://www.youtube.com/watch?v=ly1W-p4SfiI>
2. **GiovedìScienza**

Video: “Scusi, mi fa il pieno di acqua?” - <https://www.youtube.com/watch?v=w9qLjlidmqM>

Press release:
<https://www.valsusaoggi.it/la-giavenese-erika-dematteis-tra-i-10-migliori-ricercatori-italiani>
<https://www.lavalsusa.it/la-ricercatrice-erika-dematteis-ha-discusso-il-suo-progetto-al-premio-giovediscienza>
<https://www.legendanews.com/giaveno-erika-dematteis-tra-i-10-finalisti-del-premio-giovedi-scienza>
https://it.geosnews.com/p/it/piemonte/to/la-ricercatrice-erika-dematteis-ha-discusso-il-suo-progetto-al-premio-giovediscienza_31050497
<https://www.vitadiocesananapinerolese.it/giovani/una-ricercatrice-di-giaveno-in-lizza-per-il-premio-giovediscienza>
3. **Video**:
 - “Research Summary”: <https://www.youtube.com/watch?v=c57GXHQibQ4&t=18s>
 - “My research at a glance!”: <https://www.youtube.com/watch?v=s1okq28-qI>
 - “HyCARE Project”: <https://www.youtube.com/watch?v=AgPccZRpaRA&t=6s>