

**Allegato alla domanda di partecipazione**  
**Curriculum formativo, didattico, scientifico e professionale del candidato**

**Dichiarazione sostitutiva di certificazioni**

(Art. 46, D.P.R. 28 dicembre 2000 n. 445)

**Dichiarazione sostitutiva dell'atto di notorietà**

(da sottoscrivere davanti all'impiegato addetto o da presentare o spedire con la fotocopia di un documento di identità)

(Art. 47, D.P.R. 28 dicembre 2000 n. 445)

Estremi del bando di selezione	D.R. n. 391 del 28.04.2021
Informazioni aggiornate al	12.07.2021
Nome e Cognome	Leon de Villiers Engelbrecht
Data di nascita	06/07/1987

Si raccomanda di indicare con precisione tutti gli elementi valutabili ai sensi del bando di selezione (aggiungere o togliere righe secondo necessità).

**Esperienza professionale**

Periodo	Ente	Principali attività e responsabilità

**Istruzione, formazione (es. titoli di studio, certificazioni professionali/linguistiche/informatiche)**

Data	Titolo / Principali tematiche	Ente
19/05/2021	Ph.D., Chemical Science and Technology	University of Cagliari
03/2017	Ph.D., Chemistry	Stellenbosch University, South Africa
03/2013	M.Sc., Chemistry	Stellenbosch University, South Africa
12/2010	B.Sc. (Hons), Chemistry	Stellenbosch University, South Africa
12/2009	B.Sc., Chemistry	Stellenbosch University, South Africa
18/06/2018	Course "ERASMUS/ GLOBUS di Lingua ITALIANA", CEFR level A2	"Centro Interdipartimentale per l'insegnamento dell'italiano agli stranieri", University of Cagliari
15/11/2017	English language certification, CEFR level C2	"Centro Linguistico di Ateneo", University of Cagliari

**Pubblicazioni / Convegni**

Cholinium-based Ionic Liquids from Hydroxycinnamic Acids as New Promising Bioactive Agents: A Combined Experimental and Theoretical Investigation. Monica Demurtas, Valentina Onnis, Paolo Zucca, Antonio Rescigno, Joanna Izabela Lachowicz, Leon Engelbrecht, Mariella Nieddu, Guido Ennas, Alessandra Scano, Francesca Mocci and Flaminia Cesare Marincola. <i>ACS Sustainable Chemistry &amp; Engineering</i> , <b>2021</b> , 9 (7), 2975-2986.
Theoretical and Experimental Study of the Excess Thermodynamic Properties of Highly Nonideal Liquid Mixtures of Butanol Isomers + DBE. Leon de Villiers Engelbrecht, Riccardo Farris, Tudor Vasiliu, Monica Demurtas, Alessandra Piras, Flaminia Cesare Marincola, Aatto Laaksonen, Silvia Porcedda and Francesca Mocci. <i>Journal of Physical Chemistry B</i> , <b>2021</b> , 125 (2), 587-600.
A <sup>195</sup> Pt NMR and MD Simulation Study of the Solvation of [PtCl <sub>6</sub> ] <sup>2-</sup> in Water-Methanol and Water-Dimethoxyethane Binary Mixtures. Leon Engelbrecht, Francesca Mocci, Aatto Laaksonen and Klaus R Koch, <i>Inorg. Chem.</i> <b>2018</b> , 57 (19), 12025-12037.

Intrinsic $^{37/35}\text{Cl}$ and $^{18/16}\text{O}$ isotope shifts in $^{195}\text{Pt}$ and $^{103}\text{Rh}$ NMR of purely inorganic Pt and Rh complexes as unique spectroscopic fingerprints for unambiguous assignment of structure. Klaus R Koch and Leon Engelbrecht, <i>Dalton Trans.</i> <b>2017</b> , <i>46</i> , 9303–9315.
Room temperature photo-induced deposition of platinum mirrors and nano-layers from simple Pt(II) precursor complexes in water-methanol solutions. Liang Xian, Leon Engelbrecht, Shani Barkhuysen and Klaus R Koch, <i>RSC Adv.</i> <b>2016</b> , <i>6</i> , 34014–34018.
Isotope Effects in $^{195}\text{Pt}$ NMR Spectroscopy: Unique $^{35/37}\text{Cl}$ - and $^{16/18}\text{O}$ -Resolved “Fingerprints” for All $[\text{PtCl}_{6-n}(\text{OH})_n]^{2-}$ ( $n = 1-5$ ) Anions in an Alkaline Solution, and the Implications of the <i>trans</i> Influence. Leon Engelbrecht, Pieter Murray and Klaus R Koch, <i>Inorg. Chem.</i> <b>2015</b> , <i>54</i> (6), 2752–2764.
Molecular Perspective on Solutions and Liquid Mixtures from Modelling & Experiment. Leon de Villiers Engelbrecht, Francesca Mocci, Yonglei Wang, Sergiy Perepelytsya, Tudor Vasiliu, Aatto Laaksonen. Chapter 3 of the book: <i>Soft Matter Systems for Biomedical Applications, Springer Proceedings in Physics</i> © Springer Nature Switzerland AG, 2021, <i>in press</i> .
DNA-polyamine interactions: Insight from Molecular Dynamics simulations on the sequence-specific binding of spermidine $^{3+}$ . Francesca Mocci, Aatto Laaksonen, Leon Engelbrecht, Tudor Vasiliu, Sergiy Perepelytsya. Chapter 4 of the book: <i>Soft Matter Systems for Biomedical Applications, Springer Proceedings in Physics</i> © Springer Nature Switzerland AG, 2021, <i>in press</i> .
Disclosing the hierarchical structure of ionic liquid mixtures by multiscale computational methods. Alessandro Mariani, Leon Engelbrecht, Andrea Le Donne, Francesca Mocci, Enrico Bodo and Stefano Passerini. Book chapter in <i>Theoretical and Computational Approaches to Predicting Ionic Liquid Properties</i> , 2021, pp. 1-67, Elsevier Inc.
Oral presentation at XI Conference of Young Scientists “Problems of Theoretical Physics”, Kyiv, Ukraine, December 21-23, 2020 (online). Organised by the Bogolyubov Institute for Theoretical Physics of the National Academy of Sciences of Ukraine. Title: Excess Thermodynamic Properties of Binary Liquid Mixtures of Butanol Isomers with Di- <i>n</i> -Butyl Ether at 298.15 K, 0.1 MPa.
Poster presentation at Computational Molecular Modeling Summer School 2019, Pula, Sardinia, 28 July - 2 August 2019. Title: Large-Scale Coarse-Grained Molecular Dynamics Simulations of Ionic Liquid Mixtures.
Poster presentation at Multiscale Modelling of Materials and Molecules 2016 meeting, Uppsala, Sweden, 6–9 June 2016. Title: Molecular Dynamics and $^{195}\text{Pt}$ NMR Study of Solvation of Simple Platinum Complexes in Water and Water-Miscible Solvent Mixtures.
Poster presentation at Analitika 2014 conference, Parys, South Africa, 2014. Title: Isotope Effects in $^{195}\text{Pt}$ NMR Spectra for Determining Speciation of Platinum Complexes in Aqueous Solution.
Poster presentation at INORG2013 (South African Chemical Institute), Durban, South Africa, 2013. Title: Isotope Shifts in the $^{195}\text{Pt}$ NMR Spectra of Octahedral Pt(IV) Complexes in Aqueous Solution: Isotopomers and the <i>trans</i> Influence.

### Altre attività scientifiche

Co-supervisor to Master’s student (Corso di Laurea Magistrale in Scienze Chimiche), University of Cagliari, 2019-2020. MD computer simulations of binary liquid mixtures.
Tutor (infra-red spectroscopy practical), Physical Chemistry II Laboratory with Prof Flaminia Cesare Marincola, University of Cagliari, 2019.
Visiting researcher at KTH, Royal Institute of Technology, Stockholm, in the HPC Europa 3 transnational access programme, February-April 2019. Large-scale coarse-grained MD computer simulations of ionic liquid mixtures.
Teaching assistant at Stellenbosch University, various undergraduate courses in General, Inorganic and Analytical Chemistry (2011-2017).

**Ulteriori informazioni pertinenti**

HPC Europa 3 transnational access programme 2019 (project code HPC170K5MD)
PhD Scholarship, University of Cagliari, 2017-2021
National Research Foundation (NRF), DST (Department of Science and Technology, South Africa) “Innovation” Scholarship, 2014–2015
Academic Merit Bursary, Stellenbosch University, 2013–2015

Cagliari, 12/07/2021

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