LUCA ZOLI –Ph.D

Personal data

Nationality: Italian
Phone: + 39 0546 699 763

Current Position

Researcher (TI) at Institute of Science and Technology for Ceramics of the National Research Council (ISTEC-CNR).

Address: Via Granarolo 64, 48018 - Faenza (RA) Italy
Phone (Office): + 39 0546 699 763
E-mail: luca.zoli@istec.cnr.it
PEC.: luca.zoli@pec.it
Home page: www.istec.cnr.it

SCIENTIFIC PUBLICATIONS

Luca has published 45 research peer-reviewed papers, as well as invited talks or co-authored of invited talks at international conferences and holds 3 patents; **H-Index: 16** (cit. **1003**).

PROFESSIONAL APPOINTMENTS

2017-2019: three times **visiting researcher** at AIRBUS (CRT, ex-AGI) at Ottobrunn Germany, host: SCHOBERTH Achim, experiments for manufacturing of materials via industrial process, collaboration within C3HARME project.

April 2018: **member of the Italian delegation** at NASA, Cleveland, Ohio.

July 2016: **Visiting Researcher** at University of Colorado Boulder, (USA) Department of Mechanical Engineering, host: Prof. Rishi Raj, Bilateral project co-founded by Ministry of Foreign Affairs and International Cooperation (MAECI) and ISTEC-CNR.

January 2015-March 2015: **Short term scholar** at University of Colorado Boulder, (USA) Department of Mechanical Engineering, Tutor Prof. Rishi Raj in collaboration with ISTEC-CNR.

September 2014 to August 2019: **Researcher** at ISTEC-CNR, Topic: structural ceramics, ultra-high temperature ceramics (UHTC), Ceramic matric composites (CMCs).

March 2013 to August 2014: **Post-Doc fellow** at ISTEC-CNR in ultra-high temperature ceramics (UHTC) Group coordinated by Dr. D. Sciti.

January 2012 to February 2013: **Chemist** at environmental research center (EX-Montedison), Marina di Ravenna (RA), Italy, environmental monitoring of Piallassa Baiona contract: "autorita' portuale Ravenna".

December 2010 to December 2012: **Chemist** at THEOLAB, Torino, Italy, detachment of Ravenna for environmental monitoring of EX-ENICHEM, industrial area of Ravenna.

November 2010: **Fellow** at IZSLER, health public corporation, detachment of Bologna, Italy.

September 2010: **Leonardo fellow** at Labtarna, Vilnius, Lithuania.

June-July 2008: **Marco Polo Fellow** at Alicante University, Alicante, Spain , Tutor Prof. Miguel Yus. (During PhD)

EDUCATION

2009: **PhD in Chemistry** at the University of Bologna (XXIII cycle).

2009: **National qualification** to pursue professional works as Chemist at the University of Bologna.

2006: **M.Sc in advanced methodology in chemistry** at the University of Bologna.

AWARDS and Merits

Marco Polo Fellowship: Marco Polo Program 2008 for young Italian Researchers to research periods abroad. University of Bologna, Italy.

Leonardo Fellowship: Oltregenius project 2010 for Italian graduates to working periods abroad. Ravenna district (Italy).

HOT Paper: Angew. Chem. Int. Ed. 47, 2008, 4162], 75 citations.

Development of the S_N1 reactions "on water" from benzylic halides to benzylic alcohols and their application in organocatalysis.

First enantioselective organocatalytic S_N1 reaction published in literature.

EDITORIAL ACTIVITIES

Peer-reviewer for several international journals (ELSEVIER, Wiley).

RESEARCH GRANTS WON SINCE 2015

- EU Horizon 2020 (with D Sciti, CNR-ISTEC, Italy, PI), C3HARME: Next generation ceramic composites for combustion harsh environments and space (2016-20). Total budget €8,033,035; 12 partners involved.
- Regional project (with F. Monteverde, CNR-ISTEC, PI) HI SCORE: HI PERFORMANCES SUSTAINABILITY AND COST REDUCTION IN MACHINE TOOL INDUSTRY (2016-2018), partial budget €177.249,36 Euro;
- Bilateral project funded by Ministry of Foreign Affairs (with D Sciti, CNR-ISTEC, Italy, PI) Ultrahigh Temperature Ceramic Matrix Composites by Additive Manufacturing Using Polymer (2016-2018), Total budget €87.000, Boulder University and Italian Aerospace Research Center (CIRA) involved.

LIST OF SCIENTIFIC PUBLICATIONS

A. Vinci, L. Zoli, D. Sciti, J. Watts, G.E. Hilmas, W.G. Fahrenholtz, Influence of fibre content on the strength of carbon fibre reinforced HfC/SiC composites up to 2100 °C, J. Eur. Ceram. Soc. 39 (2019) 3594–3603. doi:https://doi.org/10.1016/j.jeurceramsoc.2019.04.049.

I.F. 4.34, citazioni 0, JSR 1.219

A. Vinci, L. Zoli, D. Sciti, J. Watts, G.E. Hilmas, W.G. Fahrenholtz, Mechanical behaviour of carbon fibre reinforced TaC/SiC and ZrC/SiC composites up to 2100°C, J. Eur. Ceram. Soc. 39 (2019) 780–787. doi:10.1016/j.jeurceramsoc.2018.11.017.

I.F. 4.34, citazioni 10, JSR 1.219

M.A. Lagos, C. Pellegrini, I. Agote, N. Azurmendi, J. Barcena, M. Parco, L. Silvestroni, L. Zoli, D. Sciti, Ti3SiC2-Cf composites by spark plasma sintering: Processing, microstructure and thermo-mechanical properties, J. Eur. Ceram. Soc. 39 (2019) 2824–2830. doi:https://doi.org/10.1016/j.jeurceramsoc.2019.03.037.

I.F. 4.34, citazioni 1, JSR 1.219.

L. Silvestroni, D. Sciti, L. Zoli, A. Balbo, F. Zanotto, R. Orrù, R. Licheri, C. Musa, L. Mercatelli, E. Sani, An overview of ultra-refractory ceramics for thermodynamic solar energy generation at high temperature, Renew. Energy. (2019). doi:10.1016/j.renene.2018.08.036.

I.F. 6.19, citazioni 0, JSR 1.889.

S. Mungiguerra, G.D. Di Martino, A. Cecere, R. Savino, L. Silvestroni, A. Vinci, L. Zoli, D. Sciti, Arc-jet wind tunnel characterization of ultra-high-temperature ceramic matrix composites, Corros. Sci. (2019). doi:10.1016/j.corsci.2018.12.039.

I.F. 6.76, citazioni 2, JSR 2.131.

L. Silvestroni, A. Vinci, S. Failla, L. Zoli, V. Rubio, J. Binner, D. Sciti, Ablation behaviour of ultra-high temperature ceramic matrix composites: Role of MeSi2 addition, J. Eur. Ceram. Soc. (2019). doi:10.1016/j.jeurceramsoc.2019.03.031.

I.F. 4.34, citazioni 1, JSR 1.219.

D. Sciti, L. Silvestroni, F. Monteverde, A. Vinci, L. Zoli, Introduction to H2020 project C3HARME–next generation ceramic composites for combustion harsh environment and space, Adv. Appl. Ceram. (2018). doi:10.1080/17436753.2018.1509822.

I.F. 1.58, citazioni 6, JSR 0.367.

P. Galizia, L. Zoli, D. Sciti, Impact of residual stress on thermal damage accumulation, and Young's modulus of fiber-reinforced ultra-high temperature ceramics, Mater. Des. 160 (2018) 803–809. doi:10.1016/J.MATDES.2018.10.019.

I.F. 6.25, citazioni 2, JSR 1.951.

L. Zoli, A. Vinci, P. Galizia, C. Melandri, D. Sciti, On the thermal shock resistance and mechanical properties of novel unidirectional UHTCMCs for extreme environments (2018) Scientific Reports, 8, n° 9148. doi:10.1038/s41598-018-27328-x

I.F. 4.36, citazioni 0, JSR 1.533.

S. Failla, C. Melandri, **L. Zoli**, G. Zucca, D. Sciti, Hard and easy sinterable B4C-TiB2-based composites doped with WC J. Eur. Ceram. Soc., 38 (9), (2018) 3089-3095. doi: 10.1016/j.jeurceramsoc.2018.02.041,

I.F. 3.411, citazioni 0, JSR 1.135.

L. Zoli, P. Galizia, L. Silvestroni, D. Sciti, Synthesis of group IV and V metal diboride nanocrystals via borothermal reduction with sodium borohydride J Am Ceram Soc, 101 (6), (2018) 2627-2637. doi: 10.1111/jace.15401

I.F. 2.841, citazioni 0, JSR 1.000.

A. Vinci, **L. Zoli**, D. Sciti, C. Melandri, S. Guicciardi. Understanding the mechanical properties of novel UHTCMCs through random forest and regression tree analysis Mat. Des., 145, (2018) 97-107. doi:10.1016/j.matdes.2018.02.061

I.F. 4.364, citazioni 0, JSR 1.751.

P. Galizia, S. Failla, **L. Zoli**, D. Sciti, Tough salami-inspired Cf/ZrB2 UHTCMCs produced by electrophoretic deposition J. Eur. Ceram. Soc., 38 (2), (2018) 403-409. doi: 10.1016/j.jeurceramsoc.2017.09.047

I.F. 3.411, citazioni 0, JSR 1.135.

A. Vinci, **L. Zoli**, D. Sciti, Influence of SiC content on the oxidation of carbon fibre reinforced ZrB2/SiC composites at 1500 and 1650 °C in air J. Eur. Ceram. Soc., 38 (2018) 3767-3776. doi: 10.1016/j.jeurceramsoc.2018.04.064

I.F. 3.411, citazioni 4, JSR 1.135.

L. Zoli, A. Vinci, L. Silvestroni, D. Sciti, M. Reece, S. Grasso, Rapid spark plasma sintering to produce dense UHTCs reinforced with undamaged carbon fibres, Mater. Des. 130 (2017) 1-7. doi:10.1016/j.matdes.2017.05.029.

I.F. 4.364, citazioni 1, JSR 1.751.

D. Sciti, D.M. Trucchi, A. Bellucci, S. Orlando, **L. Zoli**, E. Sani, Effect of surface texturing by femtosecond laser on tantalum carbide ceramics for solar receiver applications, Sol. Energy Mater. Sol. Cells. 161 (2017) 1-6. doi:10.1016/j.solmat.2016.10.054.

I.F. 4.784, citazioni 6, JSR 1.587

E. Sani, L. Mercatelli, M. Meucci, L. Zoli, D. Sciti, Lanthanum hexaboride for solar energy applications, Sci. Rep. 7 (2017). doi:10.1038/s41598-017-00749-w.

I.F. 4.259, citazioni 2, JSR 1.625.

A. Vinci, **L. Zoli**, E. Landi, D. Sciti, Oxidation behaviour of a continuous carbon fibre reinforced ZrB~~2~~–SiC composite, Corros. Sci. 123 (2017). doi:10.1016/j.corsci.2017.04.012.

I.F. 5.245, citazioni 1, JSR1.863.

L. Zoli, D. Sciti, Efficacy of a ZrB2–SiC matrix in protecting C fibres from oxidation in novel UHTCMC materials, Mater. Des. 113 (2017) 207–213. doi:10.1016/j.matdes.2016.09.104.

I.F. 4.364, citazioni 12, JSR 1.751.

L. Zoli, D. Sciti, L.-A. Liew, K. Terauds, S. Azarnoush, R. Raj, Additive Manufacturing of Ceramics Enabled by Flash Pyrolysis of Polymer Precursors with Nanoscale Layers, J. Am. Ceram. Soc. 99 (2016). doi:10.1111/jace.13946.

I.F. 2.841, citazioni 3, JSR 1.000.

S. Azarnoush, F. Laubscher, **L. Zoli**, R. Raj, Additive Manufacturing of SiCN Ceramic Matrix for SiC Fiber Composites by Flash Pyrolysis of Nanoscale Polymer Films, J. Am. Ceram. Soc. 99 (2016). doi:10.1111/jace.14145.

I.F. 2.841, citazioni 2, JSR 1.000.

C. Musa, R. Licheri, R. Orrù, G. Cao, D. Sciti, L. Silvestroni, **L. Zoli,** A. Balbo, L. Mercatelli, M. Meucci, E. Sani, Processing, mechanical and optical properties of additive-free ZrC ceramics prepared by Spark Plasma Sintering, Materials (Basel). 9 (2016). doi:10.3390/ma9060489.

I.F. 2.654, citazioni 2, JSR 0.834.

D. Sciti, **L. Zoli**, L. Silvestroni, A. Cecere, G.D. Di Martino, R. Savino, Design, fabrication and high velocity oxy-fuel torch tests of a Cf/ZrB2 fiber nozzle to evaluate its potential in rocket motors, Mater. Des. 109 (2016). doi:10.1016/j.matdes.2016.07.090.

I.F. 4.364, citazioni 8, JSR 1.751.

D. Sciti, A. Natali Murri, V. Medri, **L. Zoli**, Continuous C fibre composites with a porous ZrB2 Matrix, Mater. Des. 85 (2015). doi:10.1016/j.matdes.2015.06.136.

I.F. 4.364, citazioni 9, JSR 1.751.

L. Zoli, A.L. Costa, D. Sciti, Synthesis of nanosized zirconium diboride powder via oxide-borohydride solid-state reaction, Scr. Mater. 109 (2015) 100–103. doi:10.1016/j.scriptamat.2015.07.029.

I.F. 3.747, citazioni 3, JSR 1.901.

L. Zoli, V. Medri, C. Melandri, D. Sciti, Continuous SiC fibers-ZrB2 composites, J. Eur. Ceram. Soc. 35 (2015). doi:10.1016/j.jeurceramsoc.2015.08.008.

I.F. 3.411, citazioni 8, JSR 1.135.

D. Sciti, L. Pienti, A. Natali Murri, E. Landi, V. Medri, **L. Zoli**, From random chopped to oriented continuous SiC fibers-ZrB2 composites, Mater. Des. 63 (2014). doi:10.1016/j.matdes.2014.06.037.

I.F. 4.364, citazioni 13, JSR 1.751.

V. Arima, M. Iurlo, **L. Zoli**, S. Kumar, M. Piacenza, F. Della Sala, F. Matino, G. Maruccio, R. Rinaldi, F. Paolucci, M. Marcaccio, P.G. Cozzi, A.P. Bramanti, Toward quantum-dot cellular automata units: Thiolated-carbazole linked bisferrocenes, Nanoscale. 4 (2012). doi:10.1039/c1nr10988j.

I.F. 7.367, citazioni 27, JSR 2.769.

M.G. Capdevila, F. Benfatti, **L. Zoli**, M. Stenta, P.G. Cozzi, Merging organocatalysis with an indium(III)-mediated process: A stereoselective α-alkylation of aldehydes with allylic alcohols, Chem. - A Eur. J. 16 (2010) 11237–11241. doi:10.1002/chem.201001693.

I.F. 5.317, citazioni 74, JSR 2.247.

P.G. Cozzi, F. Benfatti, L. Zoli, Organocatalytic asymmetric alkylation of aldehydes by SN1-type reaction of alcohols Synthesis, (13), (2009) art. no. A46. (Short Survey) doi: 10.1055/s-0029-1217415

I.F. 2.34, citazioni 0, JSR 1.046.

P.G. Cozzi, F. Benfatti, L. Zoli, Organocatalytic asymmetric alkylation of aldehydes by SN1-type reaction of alcohols Synlett, (11), (2009) A46-A48. (Short Survey) doi: 10.1055/s-0029-1217512.

I.F. 1.84, citazioni 0, JSR 0.856.

L. Zoli, P.G. Cozzi, Electrophilic activation of aldehydes “on water”: A facile route to dipyrromethanes, ChemSusChem. 2 (2009) 218–220. doi:10.1002/cssc.200900023.

I.F. 7.226, citazioni 12, JSR 2.385.

P.G. Cozzi, F. Benfatti, **L. Zoli**, Organocatalytic Asymmetric Alkylation of Aldehydes by SN1-Type Reaction of Alcohols, Angew. Chemie Int. Ed. 48 (2009) 1313–1316. doi:10.1002/anie.200805423.

I.F. 11.994, citazioni 186, JSR 5.800.

F. Benfatti, M.G. Capdevila, **L. Zoli**, E. Benedetto, P.G. Cozzi, Catalytic stereoselective benzylic C-H functionalizations by oxidative C-H activation and organocatalysis., Chem. Commun. (Camb). (2009) 5919–5921.

I.F. 6.319, citazioni 100, JSR 2.506.

R. Martínez, **L. Zoli**, P.G. Cozzi, D.J. Ramón, M. Yus, Synthesis of camphorsulfonamide-based quinoline ligands and their N-oxides: first use in the enantioselective addition of organozinc reagents to aldehydes, Tetrahedron Asymmetry. 19 (2008) 2600–2607.

I.F. 2.126, citazioni 21, JSR 0.751.

P.G. Cozzi, **L. Zoli**, A rational approach towards the nucleophilic substitutions of alcohols “on water,” Angew. Chemie - Int. Ed. 47 (2008) 4162–4166. doi:10.1002/anie.200800622.

I.F. 11.994, citazioni 109, JSR 5.800.

P.G. Cozzi, A. Mignogna, **L. Zoli**, Catalytic Enantioselective Reformatsky Reactions, Pure and Applied Chem. 80 (2008) 891–901.

I.F. 2.626, citazioni 23, JSR 0.972.

G. Alvaro, R. Di Fabio, A. Gualandi, C. Fiorelli, M. Monari, D. Savoia, **L. Zoli**, Stereoselective synthesis of substituted 2,5-diazabicyclo[2.2.1]heptanes by iodine-mediated cyclization of optically pure compounds containing the 4,5-diamino-1,7-octadiene and 1,2-diamino-4-alkene moieties, Tetrahedron. 63 (2007) 12446–12453.

I.F. 2.651, citazioni 9, JSR 0.907.

P.G. Cozzi, A. Mignogna, **L. Zoli**, Practical chloromanganese-Salen-catalyzed enantioselective Reformatsky reaction with ketones, Synthesis (Stuttg). (2007). doi:10.1055/s-2007-983780.

I.F. 2.650, citazioni 10, JSR 1.046.

P.G. Cozzi, S. Gambarotta, M. Monari, **L. Zoli**, Convenient preparation of chiral dipyrrolylmethanes containing a chiral moiety, Collect. Czechoslov. Chem. Commun. 72 (2007). doi:10.1135/cccc20071046.

I.F. 1.137, citazioni 0, JSR 2.506.

P.G. Cozzi, **L. Zoli**, Nucleophilic substitution of ferrocenyl alcohols “on water,” Green Chem. 9 (2007) 1292. doi:10.1039/b711523g.

I.F. 9.125, citazioni 63, JSR n.a.

International and National Conferences since 2015

- Speaker: 13th Pacific Rim Conference on Ceramic and Glass Technology (PACRIM 13), Owinawa, Japan, October 25- November 1, 2019.
- Invited Speaker: 11th International Conference on High-Performance Ceramics (CICC-11), Kunming, China, May 25-29, 2019.
- Speaker: Materials2018, 22-26 giugno 2018, Bologna, Italy, international conference
- 7th International Congress on Ceramics, ICC7 2018, 17-21 June, Brazil; **co-authored of invited talks;**
- 14th Ceramics Congress, CIMTEC 2018, 4-8 June Perugia, Italy**; Invited;**
- 10th International Conference on High-Performance Ceramics (CICC)_UHTC & MAX Phase Workshop 2017, Nanchang, Cina, 4-7 Novembre 2017; **Invited;**
- Ultra-High Temperature Ceramics: Materials for Extreme Environment Applications IV (ECI 2017), September 17-20, Cumberland Lodge, Windsor, UK; **Oral contribution, co-authored of invited talks**
- 15th Conference & Exhibition of the European Ceramic Society (ECerS 2017), July 9-13, 2017, Budapest, Hungary; **Oral & Poster contributions;**
- 12th Pacific Rim Conference on Ceramic and Glass Technology (PACRIM 12), including Glass & Optical Materials Division Meeting (GOMD 2017), May 21–26, 2017, Waikoloa, Hawaii; **co-authored of invited talks;**
- JEC World2016, Composite show&conference, March 8-10, 2016, Paris, France;
- 40th International Conference and Expo on Advanced Ceramics and Composites (ICACC2016), 24-January 29, 2016, Daytona, Oralando, USA; **Oral contribution, co-authored of invited talks**

- 14th international conference of European ceramic society (ECERS 2015), July 20-26, 2015, Toledo, Spain; **Poster contribution, co-authored of invited talks**
- Workshop CNR-CSIC, July 8-9, 2015, Rome, Italy; **Poster contribution**
- Ultra-high Temperature Ceramics: Materials for Extreme Environment Applications III (ECI2015), April 12-16, 2015, Gold Coast, Australia; **co-authored of invited talks**

OTHER RESPONSABILITY

2017 and 2018: responsible for hazardous waste disposal;

2016 to present: responsible for UHTCMC laboratory;

2014 to 2017: responsible for chemical reagents management;

2006 to present: Tutoring experience as supervisor of PhD student, students and laboratory technician;

2011: Environmental Laboratory Manager, detachment of Ravenna for THEOLAB.

Il presente Curriculum è reso sotto forma di dichiarazione sostitutiva di certificazione e di dichiarazione sostitutiva dell'atto di notorietà ai sensi degli artt. 46 e 47 del d.P.R. 445/2000. All'uopo il sottoscritto dichiara di essere consapevole della responsabilità penale prevista, dall'art. 76 del citato decreto per le ipotesi di falsità in atti e dichiarazioni mendaci ivi indicate.
Il sottoscritto autorizza il trattamento dei dati personali in esso contenuti e per le finalità connesse all'uso dello stesso ai sensi del d.lgs. n. 196/03 e successive modifiche e integrazioni.

Data	Signature
275/01/2020	Luca Zoli