

Curriculum Vitae Europass



Personal information

First name / Surname **Giorgia Franchin**
Address Via Pioveghetto 18C, 35136 Padova (PD), Italy
Mobile phone +393404683679
Skype gio.franchin89
E-mail giorgia.franchin@unipd.it
LinkedIn <https://it.linkedin.com/in/giorgiafranchin>
Nationality Italian
Date of birth 06/27/1989
Gender F

Work experience

Dates	3 rd September 2018 - present
Position	Researcher fellow (RTD-a)
Research activity	<p>I am part of the Advanced Ceramics and Glasses team. My research focus is on additive manufacturing of porous and dense glass and ceramic components and ceramic matrix composites with sizes ranging from micrometers to meters. Potential applications include filters, catalysts and electrodes.</p> <p>I am involved in the team's several collaboration and contracts with national and international industrial partners.</p> <p>I teach a class on materials science and technology ("Materiali") for 6 c.f.u. for the Bachelor Degree in Energy Engineering.</p>
Name and type of organization	Università degli Studi di Padova Industrial Engineering Department
Dates	1 st January 2017 – 2 nd September 2018
Position	Post-doctoral researcher
Research activity	<p>I worked with Prof. Colombo's team on additive manufacturing of porous ceramic components for adsorption applications and their mechanical characterization; part of the research goes under the academic strategic project MAESTRA "From Materials for membrane electrode Assemblies to electric Energy conversion and SToRAge devices".</p>
Name and type of organization	Università degli Studi di Padova Industrial Engineering Department
Dates	February 2017 – August 2018

Position **Professional activity in consultancy, research and development**

Activity Technical consultancy and professional research and development activities.

Collaborations: BI Research Srl, ITS Cosmo.

Collaboration with Neri Oxman's Mediated Matter Group at Massachusetts Institute of Technology (MIT) Media Lab for the exhibition "Via Della Notte" in Lexus' pavilion at the Triennale Design Museum during the Triennale Design Week 2017 (April 4-9, 2017).

Education and training

Dates 15th January 2015 – 31 August 2015

Research activity Visiting Student in Prof. Oxman's Mediated Matter research group at the MIT Media Lab.

Name and type of organisation providing education and training Massachusetts Institute of Technology (MIT)

Dates 1st January 2014 – 31st December 2016

Title of qualification awarded **Doctor of Science in Industrial Engineering**

Research activity I worked with Prof. Colombo's team on the production of complex ceramic components via additive manufacturing techniques, with particular focus on extrusion-based technologies such as DIW. I worked with preceramic polymers for the analogy with rapid prototyping of polymers, geopolymers for their solidification through polycondensation, glass for its rheology control with temperature.

Name and type of organisation providing education and training Università degli Studi di Padova

Dates 1st October 2011 – 18th October 2013

Title of qualification awarded **Master Degree in Materials Engineering**

Gained mark 110 magna cum laude/110

Name and type of organisation providing education and training Università degli Studi di Padova

Date 1st March 2012 – 31st August 2012

Exchange Program **European Program LPP-ERASMUS**

Name and type of organisation providing education and training Friedrich-Alexander Universität Erlangen-Nürnberg (Germany)

Dates 1st October 2008 – 28th September 2011

Title of qualification awarded **Bachelor Degree in Chemical and Materials Engineering**

Gained mark 110 magna cum laude /110

Name and type of organisation providing education and training Università degli Studi di Padova

Dates September 2003 – June 2011

Title of qualification awarded **Scientific high school leaving qualification**

Gained mark 100 / 100

Name and type of organisation providing education and training Liceo Scientifico Statale Galileo Galilei

Personal skills and



competences

Mother tongue Italian

Other language(s) English, German

Self-assessment European level

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C1	C1	C1	C1	C1
B2	B2	B2	B2	B2

English**German**

Language certificate(s)

International English Language Testing System (IELTS): score 8/9 (2014)

Goethe Institut Inter Naciones: Fit in Deutsch 2 - German - Level A2 (2003)

Technical skills and competences

Industrial Engineering License (2014)

Additive manufacturing via fused deposition modeling, direct ink writing, stereolithography and binder jetting of polymeric, preceramic, ceramic, geopolymeric and glass objects and structures from CAD meshes

Synthesis of ceramic materials from preceramic mixtures

Chemo-physical, microstructural and rheological characterisation of materials

Mechanical characterization of printed components, foams and dense parts: elastic modulus, compressive strength (compression test), flexural strength (3- and 4-point bending test)

Computer skills and competences

European Computer Driving Licence (ECDL)

Basics on Matlab®

Basics on CAD software (Solidworks, Rhinoceros) and G-code editing

Social and organisational skills and competences

I am member of the Italian, European and American Ceramic Societies and I was a delegate of the President's Council of Student Advisor and of the Global Graduate Researcher Network of the American Ceramic Society.

I am on the organizing and scientific committee of a young researcher forum about Additive Manufacturing of ceramics, the young Ceramists Additive Manufacturing Forum (yCAM). It is organized by Europe Makes Ceramics, a branch of the European Ceramic Society, and funded by JECS Trust. Its first edition took place in Berlin on March 23rd – 24th, 2017 and the second edition took place in Padova on May 3rd – 4th, 2018. The third edition will take place in Mons on April 3rd – 5th, 2019.

Prizes etc.

ACerS ECD Student Travel Grant to attend ACerS ICACC Conference (Daytona Beach, FL, 2016, 2017 and 2018)

ECerS-ACerS Students Exchange program Scholarship to attend ACerS Winter Workshop (Orlando, FL, 24-29/01/2016)

Graduate Excellence in Materials Science: Diamond Award; The American Ceramic Society – Basic Science Division (2015)

Aldo Gini scholarship, A. Gini foundation, Padova, Italy (2014)

Best Poster Award, Institute of Science and Technology for Ceramics (ISTEC) and Italian Ceramic Society (2014)

List of Publications



Papers

- Klein, J., Stern, M., Franchin, G., Kayser, M., Inamura, C., Dave, S., Weaver, J., Houk, P., Colombo, P., Yang, M., Oxman, N. (2015). Additive Manufacturing of Optically Transparent Glass. 3D PRINTING AND ADDITIVE MANUFACTURING, vol. 2, p. 92-105, ISSN: 2329-7662, doi: 10.1089/3dp.2015.0021
- Zanchetta, E., Cattaldo, M., Franchin, G., Schwentenwein, M., Homa, J., Brusatin, G., Colombo, P. (2016). Stereolithography of SiOC Ceramic Microcomponents. ADVANCED MATERIALS, vol. 28, p. 370-376, ISSN: 0935-9648, doi: 10.1002/adma.201503470
- Bai, C., Franchin, G., Elsayed, H., Conte, A., Colombo, P. (2016). High strength metakaolin-based geopolymer foams with variable macroporous structure. JOURNAL OF THE EUROPEAN CERAMIC SOCIETY, vol. 36, p. 4243-4249, ISSN: 0955-2219, doi: 10.1016/j.jeurceramsoc.2016.06.045
- Franchin, G., Colombo, P. (2015). Porous geopolymer components through inverse replica of 3D printed sacrificial templates. JOURNAL OF CERAMIC SCIENCE AND TECHNOLOGY, vol. 6, p. 105-112, ISSN: 2190-9385, doi: 10.4416/JCST2014-00057
- Elsayed, H., Zocca, A., Franchin, G., Bernardo, E., Colombo, P. (2016). Hardystonite bioceramics from preceramic polymers. JOURNAL OF THE EUROPEAN CERAMIC SOCIETY, vol. 36, p. 829-835, ISSN: 0955-2219, doi: 10.1016/j.jeurceramsoc.2015.10.034
- Zocca, A., Franchin, G., Elsayed, H., Gioffredi, E., Bernardo, E., Colombo, P. (2016). Direct Ink Writing of a Preceramic Polymer and Fillers to Produce Hardystonite (Ca₂ZnSi₂O₇) Bioceramic Scaffolds. JOURNAL OF THE AMERICAN CERAMIC SOCIETY, vol. 99, p. 1960-1967, ISSN: 0002-7820, doi: 10.1111/jace.14213
- Franchin, G., Scanferla, P., Zeffiro, L., Elsayed, H., Baliello, A., Giacomello, G., Pasetto, M., Colombo, P. (2017). Direct ink writing with geopolymeric inks. JOURNAL OF THE EUROPEAN CERAMIC SOCIETY, vol. 37 (6), pp. 2481-2489, doi: 10.1016/j.jeurceramsoc.2017.01.030
- Colombo, P., Schmidt, J., Franchin, G., Zocca, A., Günster, J. (2017). Additive manufacturing techniques for fabricating complex ceramic components from preceramic polymers. AMERICAN CERAMIC SOCIETY BULLETIN, vol. 96 (3), pp. 16-23
- Franchin, G., Wahl, L., Colombo, P. (2017). Direct ink writing of ceramic matrix composite structures. JOURNAL OF THE AMERICAN CERAMIC SOCIETY, vol. 100 (10), pp. 4397-4401
- Brun, P.-T., Inamura, C., Lizardo, D., Franchin, G., Stern, M., Houk, P., Oxman, N. (2017) The molten glass sewing machine. PHILOSOPHICAL TRANSACTION OF THE ROYAL SOCIETY A, vol. 375 (2093) doi: 10.1098/rsta.2016.0156
- Bai, C., Franchin, G., Elsayed, H., Zaggia, A., Conte, L., Li, H., Colombo, P. (2017). High-porosity geopolymer foams with tailored porosity for thermal insulation and wastewater treatment. JOURNAL OF MATERIAL RESEARCH, vol 32 (17), pp. 3251-3259, doi: 10.1557/jmr.2017.127
- Franchin, G., Maden, H. S., Wahl, L., Baliello, A., Pasetto, M., Colombo, P. (2018). Optimization and Characterization of Preceramic Inks for Direct Ink Writing of Ceramic Matrix Composite Structures. MATERIALS, vol 11, pp. 515, doi:10.3390/ma11040515
- Innocentini, M., Botti, R., Bassi, P., Paschoalato, C., Flumignan, D., Franchin, G., Colombo, P. (2019). Lattice-shaped geopolymer catalyst for biodiesel synthesis fabricated by additive manufacturing. CERAMICS INTERNATIONAL, vol 45, pp. 1443-1446, doi: 10.1016/j.ceramint.2018.09.239

Patents

- Klein, J.; Franchin, G.; Stern, M.; Kayser, M.; Inamura, C.; Dave, S.; Oxman, N.; Houk, P.: Methods and Apparatus for Additive Manufacturing of Glass, U.S. Patent US9896368B2, filed 2015/04/27
- Colombo, P.; Franchin, G.; Elsayed, H.; Sin, A.: Geopolymeric Formulations and Associated Methods for the Manufacturing of Three-Dimensional Structures, in particular in Manufacturing Brake Pads, IT Patent Application ITUB20159502A1, filed 2015/12/18.

Videos

- GLASS – Glass 3D Printing [<https://vimeo.com/136764796>]
- The Molten Glass Sewing Machine [<https://www.youtube.com/watch?v=d1SB3F3EFrY>]
- Keynote “High-tech geopolymer ceramic: Direct and indirect 3D printing with geopolymers” [<https://www.geopolymer.org/conference/gpcamp/gpcamp-2016/>]
- GLASS II [<https://vimeo.com/211778198>]

