

## 1. Full name and date

- Massera Jonathan
- Male
- CV written May 31<sup>st</sup>, 2016

## 2. Date and place of birth, nationality, current residence

- 11 May 1981, Saint Martin d'Hères, France
- Citizenship: FRENCH
- current residence: Vistinkatu 1A, 37120 Nokia, Finland

## 3. Education and degrees awarded

- **Doctor of Philosophy:** Clemson University, SC, USA  
Major: Materials Science and Engineering  
PhD advisor: Prof. Kathleen Richardson  
PhD Title: "Nucleation and growth behavior of tellurite-based glass suitable for mid-infrared applications"  
Graduation: December 2009
- **Master of Science:** Double Degree between Polytech'Montpellier, Montpellier, France and Politecnico di Torino, Turin, Italy.  
Major: Materials Science and Engineering  
MSc advisors: Profs. Monica Ferraris and Kathleen Richardson  
MSc. title: "Formation/Dissolution of metallic nanoparticles in Thin SiO<sub>2</sub> films"  
Graduation: June 2006

## 4. Linguistic skills

- Mother tongue: French
- Fluent (C2): Italian and English
- Basic (A2): Finnish and Swedish

## 5. Current position

- **Sept 2014- present:** Assistant Professor (Tenure Track) and Academy Research Fellow appointed by the Academy of Finland (2014-2019), Tampere University of Technology, Department of Electronics and Communication Engineering, Biomaterials and Tissue Engineering Group.
- **Research career phase:** 3) Established or independent researcher
- **Grant:** Academy Research Fellow appointed by the Academy of Finland (2014-2019).

## 6. Previous work experience

- **Jan. 11-Aug. 14:** Senior researcher, Post-Doctoral Researcher appointed by the Academy of Finland, at Åbo Akademi, Finland.
- **Jan. 10- Dec. 10:** Post doctorate at Åbo Akademi, Finland
- **Sept. 06 – Dec. 09** Teaching assistant at Clemson University, SC/USA

## 7. Research funding as well as leadership and supervision

- **2017**  
Follow-on Funding for Research Cost 2 years 139994€  
"OPTIBIO" OPTIcally- and BIO-active glass fibers to track and support tissue healing"
- **2016**  
Jane and Aatos Erkkö Foundation 4 years 390000€  
"AGATE: bioActive Glass scAffold for Tissue Engineering"  
Academy of Finland: Mobility Grant to Germany 2 years 14400€  
nLIGHT 6 months 4500€  
"Er<sup>3+</sup>-ALPO<sub>4</sub> nanoparticles doped glasses"
- **2015**  
nLIGHT 6 months 4500€

“Er<sup>3+</sup>-ALPO<sub>4</sub> nanoparticles synthesis”

- **2014**

Academy of Finland Academy Research Fellow	5 years	434485€
“OPTIBIO” OPTIcally- and BIO-active glass fibers to track and support tissue healing”		
Initial Funding for Research Cost	3 years	209765€
“OPTIBIO” OPTIcally- and BIO-active glass fibers to track and support tissue healing”		

- **2013**

nLIGHT	6 months	3500€
“Er <sup>3+</sup> -Al <sub>2</sub> O <sub>3</sub> doped borosilicate glasses”		

- **2012**

nLIGHT	6 months	3500€
“Nanoparticles formation in glasses for optical application”		

- **2011**

Academy of Finland Postdoctoral Researcher	3 years	283600€
“Optical Fibers with bioactive surface”		

Åbo Akademi foundation

Stiftelsens för Åbo Akademi forskningsinstitut 2011	1 year	21600€
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- **2010**

Johan Gadolin	1 year	24000€
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Post doctoral scholarship 2010

## Supervision experience

- Post Doctoral

**Amy Nommeots-Nomm:** “Bioactive glass scaffolds manufactured via 3D printing”, start Sept. 2016

**Mizhang Xiao:** co-supervised with Dr. Leena Hupa, 2011.

- Doctoral Student

**Ayush Mishra:** Phosphate bioactive fibers for medical applications, (started 03.2015)

**Jenna Tainio:** Borosilicate scaffolds for Tissue Engineering (started 01.2017)

**Inari Lyyra:** Composites for urethra and trachea applications: (started 01.2017, co-supervision with Prof. M. Kellomäki)

- Masters students

**Juuso Pohjola:** Student from Tampere University of Technology: Scaffold processing from Sr and Mg containing bioactive borosilicate glasses, start May 2017

**Marta Martelossi:** Student from Politecnico do Torino, Italy: Antioxidant effect of bioactive glasses, start Apr. 2017, co-supervision with Prof. Enrica Verné.

**Ngoc Bao Huynh:** Student from Tampere University of Technology, “Protein grafting at the surface of bioactive glasses”, start Mar. 2017

**Amel Houaoui:** Student from Cergy University, France, “PLA/bioactive glass composites: Dissolution and Cellular behavior”, Co supervision with Dr. Michel Boissière, Start Jan. 2017

**Katri Leino:** Student from Tampere University of Technology, “PLA/bioactive glass composites: chemical modification during dissolution, Co supervision with Prof. Minna Kellomäki and Dr. Terttu Hukka.

**Viivi Jokinen:** Student from Tampere University of Technology, “Mechanical testing of biomaterials: challenge and limitations”, Start Feb. 2017

**Tomi Antilla:** Student from Tampere University of Technology, “Sintering of Mg and Sr containing bioactive glass”, Start Jan. 17

**Hamasa Mohammad Hashem:** Student from Tampere University of Technology (6 months), “Chitosan/bioactive glass composite: hydrolytic resistance and mechanical properties” 2017

**Jenna Tainio:** Student from Tampere University of Technology (6 months), “Sintering of borosilicate bioactive glasses”, 2016

**Srijana Ghimire:** Student from Tampere University of Technology (6 months), “PLA/bioactive glass composite: hydrolytic resistance and mechanical properties”, 2016

**Erika Erasmus:** Student from Witwatersrand University, Johannesburg, co-supervised with Prof. Iakovos Sigalas, “Sintering of borosilicate glasses using porogenic agent”, Started January 2015

**Nirajan Ohja:** Student from Tampere University of Technology (6 months), “Borosilicate glass scaffolds for tissue engineering”, 2016

**Sergi Roca Puertas:** Erasmus student Universidad Politécnica de Madrid / Tampere University of Technology (6 months): “ Phosphate bioactive glass fibers drawn from melt”, 2016

**Edoardo Buffa:** student from Politecnico di Torino (6 months): “borosilicate glass functionalization for protein grafting”, 2016

**Aida Khayyami:** student from Tampere University of Technology (8 months): “Low temperature sol-gel on polymeric substrate”, 2015

**Fantine Sabatier:** student from Polytech’Montpellier (4 months): “Phosphate based glasses and fiber doped with boron: effect on bioactivity and cell proliferation”, 2014

**Maude Gaussiran:** student from Polytech’Montpellier (4 months), co-supervised with Dr. Laetitia Petit (nLIGHT): “Phosphate based glass doped with particles showing persistent luminescence”, 2014

**Cecilia Gestraud:** student from Bordeaux University (3 months), co-supervised with Dr. Laetitia Petit (nLIGHT) and Thierry Cardinal (ICMCB Bordeaux): “YAG and Er<sup>3+</sup>-Al<sub>2</sub>O<sub>3</sub> nanoparticles doping in phosphate-based glasses”, 2014

**Morgane Vassallo-Breillot:** student from Polytech’Montpellier (4 months): Effect of Cerium doping on the physical, thermal, structural, optical and bioactive properties of phosphate glasses, 2013.

**Marielle Mayran:** student from Polytech’Montpellier (4 months): Crystallization mechanism of phosphate-based glasses and its impact on bioactivity, 2013

**Benjamin Sevrette:** student from Bordeaux University (4 months): “Impact of crystallization on the Er-luminescence of new borosilicate glasses doped with La, Ce, Ca and Sr”, 2012.

**Corinne Claireaux:** student from Rennes University (3 months): “Effect of Na<sub>2</sub>O/B<sub>2</sub>O<sub>3</sub> ratio on the glass thermal, physical and structural properties and its impact on glass bioactivity”, 2010.

- **Undergraduate students**

**Mikko Hongisto:** Undergraduate student from Tampere University of Technology, “3D printing and sintering of clear glass for biophotonics”, 2017

**Henriikka Teittinen:** Undergraduate student from Tampere University of Technology, “PL containing borosilicate scaffolds”, 2017

**Romain Laurent:** Undergraduate student from Rennes University (3 months), “Mechanical properties of Ag doped phosphate fibers” 2017

**Céline Neukomm:** Undergraduate student from Rennes University (3 months), “Crystallization of Cu-doped phosphate glasses and their draw-ability into fiber”, 2016

**Maeva Fabert:** Undergraduate student from Rennes University (3 months), “Crystallization of borosilicate and borate glasses”, 2015

**Anna Iisa:** Undergraduate student from University of Colorado Boulder (3 months): Effect of CaO substitution for SrO on the thermal, structural and in vitro properties of bioactive glass S53P4, 2012.

**Gözde Unal:** Laboratory assistant (co-supervised with Dr. Leena Hupa), 2012.

**Chao Gao:** Undergraduate student from Åbo Akademi (3 months), co-supervised with Dr. Leena Hupa, “Sintering of bioactive glass 13-93”, 2011.

**Jessica Jackson:** Undergraduate student from Clemson University (1 year): “Alkaline/ alkaline earth doping effect on the optical, thermal and structural properties of tellurite based glasses”, 2009.

**Jean Remond:** Undergraduate student from INSA Lyon/Clemson University (3 months): “Crystallization of tellurite and Ag-doped tellurite based glasses”, 2009.

**Benjamin Tincher:** Undergraduate student from Clemson University (2 years): “Viscosity of new tellurite glasses”, 2008-2009.

**Adam Haldeman:** Undergraduate student from Clemson University (1 year): “Processing and characterization of core-clad tellurite glass preforms and fibers fabricated by rotational casting”, 2008.

**Iona Moog:** Undergraduate student from Bordeaux University (3 months) “Enhancement of mechanical properties of tellurite core-clad fibers”, (2008)

**Arnaud Martin:** Undergraduate student from Bordeaux University/Clemson University (3 months): “Formation/Dissolution of Ag-nanoparticles in SiO<sub>2</sub> thin films using laser irradiation”, 2007

- ***High School research project supervised at Clemson University***

**Mikayla Spittler** (summer 2008)

**Ankit Grover** (June 2007-summer 2008)

**Amanda Kunkle** (summer 2007)

## 8. Merits in teaching and pedagogical competence

- Successfully completed the following pedagogical training:
  - “Cornerstones of teaching: learnings theories in university context” (5ECTS)
  - “Planning and preparing teaching” (5ECTS)
  - “Participatory learning and teaching” (2ECTS)
- Teaching experience:

### **Tampere University of Technology**

- ELT 73106      **Bioceramics and their clinical applications**, (~ 30 students) Fall 2015-present

### **Åbo Akademi**

- MSc, 416503.0      **Metals Corrosion**, team-taught with Docent Leena Hupa, (~10 students) spring 2010-2014

- MSc, 416302.0      **Inorganic Chemistry**, (~10 students) Fall 2010-2014

- MSc, 416517.0      **Materials in Energy Technology**, spring 2011

### **Clemson University**

- CME 241      **Metrics Laboratory 1** (teacher assistant), fall 2007

- CME 413      **Noncrystalline Materials** (teacher assistant), fall 2009

## 9. Awards, prizes and honours

- **2015**      Outstanding reviewer award, Elsevier
- **2009**      Graduate Fellow Program 2009, COMSET (\$7500)
- **2008**      Professional Enrichment Grant 2008 (\$500)

Glass and Optical materials Division of the American Ceramic Society, Best Graduate Student Poster Award – First Place- in recognition of the poster presentation entitled: “Tellurite based glasses for infrared application”. J. Massera, A. Haldeman, L. Petit, K. Richardson.

## 10. Other academic merits

- Jury Member at the PhD defense of Gang Zhou at Rennes University, 21.10.2015
- Committee member of the JOHN JEPPSON AWARD (American Ceramic Society 2014-2017)
- Reviewer for Journal of Non-Crystalline Solids, Journal of the American Ceramic Society, Ceramic International, Materials Science and Engineering C, International Journal of Glass, Journal of Compounds and Alloys, Acta Biomaterialia, Biomedical Glasses.
- Member of the American Ceramic Society (ACerS) (2008-present)
- Member of the technical committee on bioactive glasses (TC04)
- Invited Talk at Politecnico di Torino (Italy), Rennes University (France), Bordeaux University (France) and the University of Honk Kong (Hong Kong).

## 11. Scientific and societal impact of research

- 42 peer-reviewed articles, 2 conference proceedings and 1 monograph, H-index = 10 (excluding self-citation)
- 10 most important articles:

1. “Dissolution behaviour of the bioactive glass S53P4 when sodium is replaced by potassium, and calcium with magnesium or strontium”, L. Hupa, S. Fagerlund, **J. Massera**, L. Björkvik, Journal of Non-Crystalline Solids, 432 Part A (2016) 41-46

2. "Processing and characterization of new phosphate glasses containing  $\text{CaAl}_2\text{O}_4:\text{Eu}^{2+}, \text{Nd}^{3+}$  and  $\text{SrAl}_2\text{O}_4:\text{Eu}^{2+}, \text{Dy}^{3+}$  microparticles", **J. Massera**, M. Gaussiran, P. Gluchowski, M. Lastusaari, L. Hupa, L. Petit, Journal of the European Ceramic Society, 35 (2015) 3863-3871.
3. "The influence of SrO and CaO in silicate and phosphate bioactive glasses on human gingival fibroblasts", **J. Massera**, A. Kokkari, T. Närhi, L. Hupa, Journal of Materials Science: Materials in Medicine, 26 (2015) 196.
4. "Crystallization behavior of phosphate bioactive glasses and its impact on glass reactivity", **J. Massera**, M. Mayran, J. Rocherullé, L. Hupa, Journal of Materials Science, 50 (2015) 3091-3102.
5. "Phosphate-based glass fiber vs. bulk in vitro bioactivity in SBF and TRIS: Change in fiber optical response to probe in vitro glass reaction", **J. Massera**, I. Ahmed, L. Petit, V. Aallos, L. Hupa, Materials Science and Engineering C, 37 (2014) 251-257.
6. "Influence of SrO substitution for CaO on the properties of bioactive glass S53P4", **J. Massera**, L. Hupa, Journal of Materials Science: Materials in Medicine, 25 (2014) 657-668.
7. "In vitro blood and fibroblast responses to thermoset BisGMA-TEGDMA/glass fiber-reinforced composite implants", A. A. Abdulmajeed, X. F. Walboomers, **J. Massera**, A. K. Kokkari, P. K. Vallittu, T. O. Närhi, Clinical Oral Implants Research, 25 (2014) 843-851.
8. "Thermal properties and surface reactivity in simulated body fluid of new strontium ion-containing phosphate glasses" **J. Massera**, L. Petit, T. Cardinal, J.J. Videau, M. Hupa, L. Hupa, Journal of Materials Science: Materials in Medicine, 24 (2013) 1407-1416.
9. "Effect of the glass composition on the chemical durability of zinc-phosphate-based glasses in aqueous solutions", **J. Massera**, K. Bourhis, L. Petit, T. Cardinal, L. Hupa, M. Hupa, Journal of Physics and Chemistry of Solids, 74 (2013) 121-127.
10. "Crystallization behavior of the commercial bioactive glasses 45S5 and S53P4", **J. Massera**, S. Fagerlund, L. Hupa, M. Hupa, Journal of the American Ceramic Society, 95 (2012) 607-613.