

PERSONAL INFORMATION

Jan Hostaša



📍 Faenza, Italy

☎ +39 0546 699713

✉ jan.hostasa@istec.cnr.it; jan.hostasa@pec.it

Sex Male | Nationality Czech

WORK EXPERIENCE

02/2017 - Present

Researcher

CNR-ISTEC, National Research Council of Italy, Institute of Science and Technology for Ceramics, Via Granarolo 64, 48018 Faenza, Italy; www.istec.cnr.it

Duration 01/02/2017 – present

- **principal investigator in the Italian PNRM research project CEMILAP**
- preparation and characterisation of transparent ceramics (oxide ceramics, e.g. YAG, MgAl₂O₄ spinel, Lu₂O₃, Sc₂O₃, Y₂O₃ with or without dopants) with both uniform and complex composite structures
 - characterisation and treatment of raw materials (nano- and submicro- and micrometric powders)
 - shaping, assembly and thermal treatments of components
 - polishing, characterisation of microstructure, optical transmittance
- presentation of results on conferences and workshops, writing and submission of scientific articles
- assistance with the preparation and realization of research projects (both national and international)
- **supervision (responsabile del laboratorio) of the ISTEC Laboratory of cutting and polishing;**

05/2016 - Present

Independent expert for the evaluation of Horizon 2020 proposals

Research Executive Agency of the European Commission

- evaluation of proposals submitted to H2020; roles: evaluator, observer

04/09/2015 - Present

Post-doctoral research fellow (Assegno di ricerca Senior)

CNR-ISTEC, National Research Council of Italy, Institute of Science and Technology for Ceramics, Via Granarolo 64, 48018 Faenza, Italy; www.istec.cnr.it

Duration 04/09/2015 – 31/01/2017

- preparation and characterisation of transparent ceramics (oxide ceramics, e.g. YAG, MgAl₂O₄ spinel, Lu₂O₃, Sc₂O₃, Y₂O₃ with or without dopants) with both uniform and complex composite structures
 - characterisation and treatment of raw materials (nano- and submicro- and micrometric powders)
 - shaping, assembly and thermal treatments of components
 - polishing, characterisation of microstructure, optical transmittance
- presentation of results on conferences and workshops, writing and submission of scientific articles
- assistance with the preparation and realization of research projects (both national and international)
- **supervision (responsabile del laboratorio) of the ISTEC Laboratory of cutting and polishing** (01/07/2015 – 31/03/2016);

11/2015

Internship

MATEIS and CLYM, INSA Lyon, F-69621 Villeurbanne Cedex, France

The stay was covered by a grant from the French embassy in Prague as a part of the 2014 Jean-Marie Lehn Prize of Chemistry

- characterisation of transparent YAG ceramics by transmission electron microscopy (TEM) with energy-dispersive x-ray spectroscopy (EDX)
- treatment of quantitative data from TEM-EDX measurements

- 04/07/2011 – 03/09/2015 **Ph.D. research fellow (Assegno di ricerca)**
CNR ISTEK, National Research Council of Italy, Institute of Science and Technology for Ceramics, Via Granarolo 64, 48018 Faenza, Italy
- preparation and characterisation of transparent ceramics (YAG with various rare-earth dopants)
 - study of the influence of dopant and sintering additives on the microstructure, optical quality and material properties; modelling of optical transmittance
 - presentation of results on conferences and workshops, writing and submission of scientific articles
 - assistance with the preparation and realization of research projects (both national and international), responsibility for work packages
- 01/01/2011 – 30/06/2011 **Internship (funded by the Italian Ministry of Foreign Affairs; *Borsa di studio*)**
CNR ISTEK, National Research Council of Italy, Institute of Science and Technology for Ceramics, Via Granarolo 64, 48018 Faenza, Italy
- preparation and characterisation of transparent Yb:YAG ceramics
 - study of the influence of dopant addition on microstructure and optical properties
 - presentation on a conference, writing and submission of scientific articles
- 14/09/2010 – 31/12/2010 **Ph.D. research fellow (contratto di prestazione d'opera in regime di collaborazione coordinata e continuativa)**
CNR ISTEK, National Research Council of Italy, Institute of Science and Technology for Ceramics, Via Granarolo 64, 48018 Faenza, Italy
- preparation and characterisation of transparent YAG ceramics
 - presentation on a conference, writing and submission of a scientific paper
- 14/07/2009 - 04/08/2009 **Internship - laboratory assistant**
VUK, Vysokoteplotní a užitková keramika, s.r.o., Tovární 346, 330 12 Horní Bříza, Czech Republic (ceramics and refractories factory)
- production control: characterization of suspensions for slip casting, preparation of refractories
 - research on refractories: thermal properties
- 02/2009 - 05/2009 **Internship**
CNR ISTEK, National Research Council of Italy, Institute of Science and Technology for Ceramics, Via Granarolo 64, 48018 Faenza, Italy
- The stay was funded by the ERASMUS programme
- Slip casting of silicon nitride ceramics*
- characterisation of the rheological behaviour of silicon nitride aqueous suspensions
 - preparation of silicon nitride ceramics by the slip casting technique
 - microstructure characterisation of sintered ceramics
 - writing of a technical report (ISTEK Report Nr. 02/09)
- 2009 (occasionally) **Translation English - Czech, Czech - English**
Lach-Ner, s.r.o., Tovární 157, 277 11 Neratovice, Czech Republic (chemical production company); contract for work
- translation of various documents: product information, scientific articles, data sheets

Review and peer-review activities

Since 06/2015 member of the Editorial Board of the journal Ceramics - Silikáty.
 Since 2012 writing peer reviews of academic papers for the following journals:

- Ceramics - Silikáty
- Journal of the European Ceramic Society
- Journal of the American Ceramic Society
- Journal of Alloys and Compounds
- International Journal of Applied Ceramic Technology
- Optical Materials

2013 review of a book (A. Ikesue et al., Ceramic Lasers, 2013, Cambridge University Press) for the journal *Československý časopis pro fyziku* (vol. 63, no. 5, 320-321, 2013)

EDUCATION AND TRAINING

21/08/2016 - 26/08/2016

ELISS 2016, ELI and HiLASE Summer School

ELI Beamlines, Dolní Břežany, Czech Republic

- Principal subjects: High-power ultrafast lasers, Generation of X-ray pulses using short pulse lasers, Ultra-intense laser matter interaction, Particle acceleration by lasers and applications, Applications of femtosecond and attosecond pulses

2010 - 2015

Doctoral degree (Ph.D.) in Chemistry and Technology of Materials

University of Chemistry and Technology, Prague (UCT Prague); Faculty of Chemical Technology

- Doctoral thesis title: *Transparent YAG ceramics for laser applications*
- Principal subjects: Transparent ceramics, Chemistry and technology of inorganic materials, Ceramic processing and production, Optical properties of materials, Thermal properties of materials, High temperature processes, New technologies in glass and ceramic
- Awards received for the thesis: Preciosa Foundation Award 2016, Werner von Siemens Excellence Award 2015 (2nd place)
- Awards received for research: 2014 Jean-Marie Lehn Prize of Chemistry (2nd place), 2013, 2014 Votoček scholarship for excellent Ph.D. students

20/11/2011

Seminar "Garnet di Yttrio e Alluminio (YAG) trasparente. Sintesi delle polveri e sinterizzazione per Spark Plasma Sintering"

University of Bologna, Faculty of Industrial Chemistry (seat in Faenza) in collaboration with the Italian Ceramic Society

Held by Dr. Giulia Spina (Politecnico di Torino)

21/09/2011 - 23/09/2011

CASC Summer School on Ceramics

Imperial College of London

- Principal subjects: Characterization of mechanical properties of materials, Technology of ceramics

14/04/2011

Nanoindentation Workshop

CNR ISTECC, Faenza, Italy and Agilent Technologies

- Principal subjects: Characterization of mechanical properties of materials by nanoindentation

04/11/2010 – 11/11/2010

Course "Phase diagrams"

CNR ISTECC, Faenza, Italy

Held by Prof. Andreas Glaeser, University of California, Berkeley, CA, USA

- Principal subjects: Phase diagrams

2008 - 2010 **Master degree (Ing.) in Chemistry and Engineering of Materials**
 University of Chemistry and Technology, Prague; Faculty of Chemical Technology

- Master thesis title: *Thermal conductivity of Al₂O₃ - ZrO₂ composite ceramics*
- Awards received for the thesis: Werner von Siemens Excellence Award 2010 (1st place), Best diploma thesis in the field of ceramics at the Department of Glass and Ceramics in 2009/2010 (awarded by the Czech Silicate Society).

2005 - 2008 **Bachelor degree (Bc.) in Chemistry and Technology of Materials**
 University of Chemistry and Technology, Prague; Faculty of Chemical Technology

- Bachelor thesis title: *Small particle statistics and the effective viscosity of nanofluids*

09/2007 - 01/2008 **ERASMUS exchange**
 University of Copenhagen, Denmark

- Principal subjects: Mathematical modelling, Nanoscience, Academic Writing

PERSONAL SKILLS

Mother tongue(s) Czech

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	C1
	CAE certificate, level C1				
Italian	C1	C1	C1	C1	B1
German	A2	B1	A2	A2	A2
French	A2	B1	A1	A1	A1

Research sectors

- **Transparent ceramics, Ceramic composites, Advanced ceramics processing, Thermomechanical properties, Light scattering, Laser gain media, Modelling of optical transmittance**

Communication, managerial and leadership skills

- co-tutoring international MSc. and Ph.D. students from other institutions during their internships at CNR-ISTEC
- leadership (Rotary Youth Leadership Award (RYLA), awarded in 2006 by Rotaract club Ostrava, Czech Republic)
- international collaboration with researchers from Italy, Czech Republic, France, Poland, Israel, USA, Romania, Argentina, Russia

Job-related skills

- hands-on experience with different scanning electron microscopes: SEM, ESEM, FE-SEM, and with EDX analysis
- measurements of optical transmittance (spectrophotometer)
- ceramic processing: powders treatment (homogenisation, spray drying, rotary evaporation, freeze spray drying), pressing, slip casting, firing (experience with different furnaces working at atmospheric pressure and with vacuum furnace)
- rheological measurements
- evaluation of X-ray diffractograms

Computer skills

- good command of Mac OS X, MS Windows, MS Office both for Mac and Windows platforms
- graphic and photo editors: Adobe Photoshop Lightroom, GIMP, Inkscape
- bibliographic database editor: JabRef
- LaTeX-based document processor LyX

Other skills

- photography
- cooking

ADDITIONAL INFORMATION

Publications

- Co-authored **more than 20 scientific papers** in both national and international journals (22 publications on Web of Science, out of which 6 as the first author);
- **H index 8** (Google Scholar)
- co-author of one book chapter (W. Pabst, J. Hostaša: *Thermal conductivity of ceramics: from monolithic to multiphase, from dense to porous, from micro to nano*. in Wythers M.C. (ed.): *Advances in Materials Science Research – Volume 7* (ISBN 978-1-61209-821-0). Nova Science Publishers, New York 2011, pp. 1-112).

Presentations,
seminars

conferences,

- Co-authored **more than 40 international conference presentations** (oral or poster) with about half as the first or presenting author.
- Invited seminar talks at INSA Lyon (France), UCT Prague (Czech Republic), IFN CNR Trento (Italy).

Coordinated projects

2014 **Coordinator** of a research project at ICT Prague: *The effect of silicon addition on the sintering of transparent YAG ceramics (Vliv přídavku křemíku na slinování transparentní YAG keramiky)*, duration 01/03/2014 to 31/12/2014.

Project no. **A2_FCHT_2014_068**, contract no. **107 88 1402** from 14/03/2014

Activity: Study of the influence of silicon addition on the microstructure and the resulting optical quality of vacuum sintered YAG ceramics: treatment of powders, coordination of thermal analyses, preparation of ceramic samples, polishing, analyses of microstructure and optical transmittance. Another part of the project focussed on the modelling of optical transmittance of transparent ceramics containing pores or inclusions of different size or quantity. Results were presented on international conferences and published in international peer reviewed journals.

2013 **Coordinator** of a research project at ICT Prague: *Preparation and characterization of layered transparent YAG composite ceramics (Příprava a charakterizace vrstvené transparentní kompozitní keramiky YAG)*, duration 01/03/2013 to 31/12/2013.

Project no. **A2_FCHT_2013_078**, contract no. **107 88 1301** from 26/03/2013

Activity: Production of composite ceramic structures YAG - Yb:YAG; treatment of powders, definition and optimization of shaping technique, analysis of dopant distribution. The produced samples were then characterized in laser testing laboratory with very good results. Project outcomes were presented on international conferences and published in international peer reviewed journals.

2012 **Coordinator** of a research project at ICT Prague: *Characterization of the mechanic and thermophysical properties of transparent Yb:YAG ceramics for laser applications (Charakterizace mechanických a termofyzikálních vlastností transparentní Yb:YAG keramiky pro použití v laserech)*, duration 01/03/2012 to 31/12/2012.

Project no. **A2_FCHT_2012_037**, contract no. **107 88 1211** from 13/03/2012

Activity: Material properties of Yb:YAG ceramics were studied with respect to the dopant content. Outcomes of the project were presented on international conferences and published in an international peer reviewed journal.

2011 **Coordinator** of a research project at ICT Prague: *Transparent YAG ceramics: characterization of properties and microstructure with respect to the preparation method and dopant content (Transparentní keramické materiály na bázi YAG: charakterizace vlastností a struktury s ohledem na způsob přípravy a obsah dopantu)*, duration 01/03/2011 - 31/12/2011.

Project no. **A2_FCHT_2011_030**, contract no. **107 88 1102** from 11/03/2011

Activity: Optimization of the production process of YAG and Yb:YAG transparent ceramics prepared via pressing of oxide powder mixtures followed by reactive sintering under high vacuum. Results were presented on national and international conferences and published in an international peer reviewed journal.

Responsibilities in projects

2015 - 2018 Key personnel in the Italian PNRM research project *CEMILAP (Ceramiche Microstrutturate per Laser di Potenza)* funded by the Italian Ministry of Defence; **Responsible of work packages in Phase 1:** WP1.2 Sistema a base di Yb:YAG: trattamento polveri, WP1.3 Sistema a base di Yb:YAG: formatura, WP1.4 Sistema a base di Yb:YAG: trattamenti termici. **Principal investigator of Phase 2, responsible of work packages in Phase 2:** WP2.1 Sistemi a base di Yb:Sc₂O₃ e Yb:Lu₂O₃: trattamento polveri, WP2.3 Sistemi a base di Yb:Sc₂O₃ e Yb:Lu₂O₃: trattamenti termici, WP2.5 Sistemi a base di Yb:Sc₂O₃ e Yb:Lu₂O₃: caratterizzazione microstruttura

Projects

2017-2018 Key personnel in bilateral project *T-SC*, involving CNR ISTE (Faenza, Italy) and ICSI (Haifa, Israel)

Activity: Selection and characterisation of starting powders, characterisation of microstructure of sintered materials.

2016 - 2017 Key personnel in the two-year bilateral project *Preparation and Characterization of Solid State laser Materials and its Application in Solar Pumped laser* involving CNR ISTE (Faenza, Italy) and NRC, Giza, Egypt.

Activity: Characterisation of powders provided by the partner from NRC, shaping, thermal treatments, characterisation of microstructure and optical properties of sintered materials.

2013 - 2015 Key personnel in the Research cooperation project *Production and characterization of transparent ceramics* between CNR ISTE, Faenza Italy and ICMCB-CNRS, Bordeaux France

Activity: Treatment of oxide powders and granulation via spray drying of mixtures for the production of YAG; polishing and optical characterization of YAG and MgAl₂O₄ spinel ceramics produced via Spark Plasma Sintering.

2012 - 2015 Key personnel in the Italian Flag project *RITMARE, La Ricerca Italiana per il Mare* – coordinated by CNR and funded by the Italian Ministry of Education, University and Research (MIUR).

Activity: Production of transparent ceramics from YAG, polishing and optical characterization of YAG and MgAl₂O₄ spinel ceramics

2012 - 2015 Key personnel in the project *Doped and co-doped polycrystalline ceramics gain media for ultrashort pulse lasers, thermal improvement and ASE management* in a joint research activity EURO-LITE (EUropean Research Objectives on Lasers for Industry, Technology and Energy), organized via LASERLAB-EUROPE, The Integrated Initiative of European Laser Research Infrastructures III funded under the 7th Framework Programme of the EU.

Activity: Production of transparent YAG ceramic components with Yb doping of various concentrations, both uniform and with structured dopant distribution, characterisation of their microstructure and optical transmittance.

2012-2013 Key personnel in the a two-year bilateral research project *Sintering, optical, micro- and nanostructural characterization of transparent and luminescent ceramic materials* (SCOC; duration 1.1.2012–31. 12.2013), involving Laboratoire de Physico-chimie des Matériaux Luminescents (Villeurbanne Cedex, Lyon, France), CNR ISTE (Faenza, Italy) and CNR IFAC, "Nello Carrara" Institute of Applied Physics, (Sesto Fiorentino, Italy).

Activity: Production of transparent YAG, Yb:YAG and Yb,Er:YAG ceramics and their microstructural characterisation.

2012-2013 Participant in the bilateral project *Porous silicate ceramics prepared with starch and starch-based products - from optimized preparation to advanced characterization* involving ICT Prague (Prague, Czech Republic) and INTEMA (Mar del Plata, Argentina), including a 1-month internship at INTEMA.

Activity: Production of silicate ceramics with controlled pore size via starch consolidation method.

Honours and awards

- **2016** Preciosa Foundation Award 2016 for outstanding dissertation thesis (awarded by the Preciosa Foundation, Czech Republic).
- **2016** Invitation to and participation at the French-Czech Young Talents Forum, organized by the French embassy in Prague, Czech Republic.
- **2016** 2nd place at Werner von Siemens Excellence Award 2015 (for dissertation thesis; awarded by Siemens and the Forum of Industry and Universities of the Czech Republic).
- **2014** Special award for outstanding presentation at the ICL 2014, 17th International Conference on Luminescence and Optical Spectroscopy of Condensed Matter, Wroclaw, Poland, 13. - 18. 7. 2014.
- **2014** 2nd place at 2014 Jean-Marie Lehn Prize of Chemistry (awarded by Solvay CR and the French Embassy in Czech Republic).
- **2013, 2014** Votoček scholarship (Votočkovovo stipendium) for excellent Ph.D. students, awarded by ICT Prague for years 2013 and 2014
- **2013** Representing Czech Republic at the Student Speech Contest at ECerS XIII, Limoges, France, 24. 6. 2013.
- **2011** Obtained research grant from the Italian Government for a six-month internship at CNR-ISTEC, Faenza, for the research of transparent ceramics (2011).
- **2010** Best diploma thesis in the field of ceramics at the Department of Glass and Ceramics in 2009/2010 (awarded by the Czech Silicate Society).
- **2010** 1st place at Werner von Siemens Excellence Award 2010 (for diploma thesis; awarded by Siemens and the Forum of Industry and Universities of the Czech Republic).

Memberships

- Czech Silicate Society (since 2010)
- Italian Ceramic Society (since 2011)
- Czech Association for Crystal Growth (since 2012)
- American Ceramic Society (2015)
- SPIE, The international society for optics and photonics (since 2016)

Trattamento dei dati personali,
informativa e consenso

- Il D.Lgs. 30/6/2003, n. 196 "Codice in materia di protezione dei dati personali" regola il trattamento dei dati personali, con particolare riferimento alla riservatezza, all'identità personale e al diritto di protezione dei dati personali; l'interessato deve essere previamente informato del trattamento .
- La norma in considerazione intende come "trattamento" qualunque operazione o complesso di operazioni concernenti la raccolta, la registrazione, l'organizzazione, la conservazione, la consultazione, l'elaborazione, la modifica, la selezione, l'estrazione, il raffronto, l'utilizzo, l'interconnessione, il blocco, la comunicazione, la diffusione, la cancellazione e la distruzione di dati, anche se non registrati in una banca dati.
- In relazione a quanto riportato, autorizzo il CNR al trattamento dei dati contenuti nel presente curriculum vitae e nella documentazione della quale fa parte integrante

(*barrare la casella*)

Si, acconsento

Consapevole delle sanzioni penali per dichiarazioni mendaci dichiaro che quanto dichiarato nel presente curriculum vitae corrisponde al vero ai sensi degli artt. 46 e 47 del DPR 445/2000.

Faenza,
Jan Hostaša