CV of the Candidate

PERSONAL INFORMATION

Name	Alessandro Venturini
Address	V I
Mobile	+
E-mail	a
Nationality	I
Date of birth	1

WORK EXPERIENCE

01/11/2018 – 28/02/2020

Postdoctoral scholar (Borsista di Ricerca) at the Department of Industrial and Civil Engineering (DICI) of the University of Pisa, Italy.

Research activities: my research focuses on the experimental testing of instrumentation for Lead-Lithium Eutectic and of technologies for tritium extraction.

01/11/2015 – 31/10/2018

PhD Student in Industrial Engineering at the Department of Industrial and Civil Engineering (DICI) of the University of Pisa, Italy. Thesis defendend on February 18th 2019.

Mark: full marks, cum laude.

Title of the thesis:" Experimental and numerical activities for the thermal hydraulic analysis of PbLi eutectic in breeding-blanket concepts of nuclear fusion reactors".

Main research activities:

1. experimental simulations of In-box LOCA accidental transient for HCLL TBS with THALLIUM facility;
2. numerical simulation of the In-box LOCA accidental transient with RELAP5-3D and RELAP5/mod3.3;
3. testing of instrumentation and components for flowing Lead-Lithium Eutectic in IELLLO facility;
4. numerical simulation of the tests carried out in IELLLO with RELAP5-3D and RELAP5/mod3.3;
5. design of the European contribution to the upgrade of MaPLE facility within the framework of the EUROfusion-UCLA collaboration.

January 2018 – March 2018: period spent working on MaPLE facility at the University of California, Los Angeles (USA) within the framework of the EUROfusion-UCLA collaboration.

Courses, workshops and summer schools undertaken during the PhD: Summer school on Fusion Technologies (2015, KIT); English courses for public speaking and for academic writing (2016, University of Pisa); 2nd ESNII+ Summer School (2016, University of Pisa); Workshop on

Thermal-Hydraulics and Thermo-Mechanical Issues for Safety (2016, ENEA RC Brasimone); Course on time-frequency analysis (2017, University of Pisa); Realistic Evaluation of the Source Term for Severe Accidents in LWRs (2017, University of Pisa); 54th Culham plasma physics summer school (2017, CCFE); ANNETTE Summer School on Nuclear Technology, Nuclear Waste Management and Radiation Protection (2018, Åbo Akademi University); several WPB5 PbLi Technologies and TER meetings and WPBB review meetings.

EDUCATION AND TRAINING

March 2016 — **European Master of Science in Nuclear Engineering (EMSNE 2015)** European Nuclear Education Network

01/02/2015– 30/09/2015 — **Post-graduate researcher** (Borsista di Studio) at the Department of Industrial and Civil Engineering (DICI) of the University of Pisa, Italy.

- Thermal-hydraulic simulations of experimental facilities working with Lead-Lithium Eutectic using RELAP5-3D system code.

02/05/2014 – 31/10/2014 — **Internship at the Karlsruhe Institute of Technology** (KIT), Karlsruhe (Germany).

Main subjets:

- Neutronic simulations (deterministic approach and Monte Carlo calculations);
- Sensitivity and uncertainty analysis.

29/11/2011 – 11/12/2014 — **Master's degree** (Laurea Magistrale) in Nuclear Engineering at the University of Pisa, Italy.
Mark: 110/110 cum laude.
Title of the thesis: "Neutronic investigations of MOX and LEU fuel assemblies for VVER reactors".
Courses undertaken:
First year: Engineering of fusion nuclear reactors; Reactor physics; Numerical methods for reactor physics; Nuclear materials; Nuclear plants I; Structural mechanics for nuclear applications; Thermal hydraulics and core engineering; Radiation detection and measurement.
Second year: Nuclear safety; Operation and control of nuclear power plants; Nuclear plants II.

11/09/2008 – 28/11/2011 — **Bachelor's degree** (Laurea Triennale) in Nuclear Engineering and Industrial safety at the University of Pisa, Italy.

Mark: 108/110.

Title of the thesis: "Evoluzione dei reattori nucleari refrigerati a sodio".

Courses undertaken:

First year: Technical drawing and CAD; Geometry and linear algebra; General physics I; Mathematical analysis I; Chemistry and material science.

Second year: General physics II; Mathematical analysis II; Numerical analysis; Networks, components and electrical systems; Solid mechanics and theory of structures; Technical physics, thermal machines and heat transfer; Manufacturing processes; Rational mechanics and applied mechanics.

Third year: Mathematical analysis III; Safety and risk analysis; Radioprotection; Elements of applied computer science; Theory of structures and theory of plates and shells; Fluid-dynamics and elements of CFD; Nuclear physics.

2003-2008 **High school diploma** (specializing in classical studies) - Liceo Classico "N. Forteguerri", Pistoia, Italy.

Main subjects:

- Mathematics, Physics, Chemistry, Biology, Astronomy;
- Latin and Latin literature, Ancient Greek and Greek literature, Philosophy, Italian literature, English and English literature, History, History of Art.

PUBLICATIONS

Papers on International Journal and Conference Proceedings

[1] L. Mercatali, A. Venturini, M. Daeubler, V. H. S. Espinoza, SCALE and SERPENT solutions of the OECD VVER-1000 LEU and MOX burnup computational benchmark, Annals of Nuclear Energy 83 (2015), 328-341.

[2] L. Mercatali, A. Venturini, V. H. S. Espinoza, Monte Carlo neutronics investigations of VVER-1000 fuel assemblies, Jan 2015, Proceedings of AMNT2015.

[3] A. Gabriele, M. Utili, L. Candido, A. Venturini, M. Zucchetti, Experimental Activities with the IELLLO Lithium-Lead Facility, Transactions of the American Nuclear Society 114 (2016), 281-284.

[4] A. Venturini, M. Utili, A. Gabriele, I. Ricapito, A. Malavasi, N. Forgione, Experimental and RELAP5-3D results on IELLLO (Integrated European Lead Lithium LOop) operation, Fusion Engineering and Design 123 (2017), 143-147.

[5] M. Utili, A. Venturini, M. Lanfranchi, P. Calderoni, A. Malavasi, THALLIUM: An experimental facility for simulation of HCLL In-box LOCA and validation of RELAP5-3D system code, Fusion Engineering and Design 123 (2017), 102-106.

[6] A. Venturini, M. Utili, D. Martelli, I. Ricapito, A. Malavasi, Experimental Campaign on Pressure Wave Propagation in LLE, Fusion Engineering and Design 136 A (2018), 809-814.

[7] A. Venturini, M. Utili, D. Martelli, A. Malavasi, I. Ricapito, M. Tarantino, Experimental investigation on HCLL-TBS In-box LOCA, Fusion Engineering and Design 146 A (2019), 173-177.

[8] D. Martelli, A. Venturini, M. Utili, Literature review of lead-lithium thermophysical properties, Fusion Engineering and Design 138 (2019), 183-195.

[9] M. Utili, A. Tincani, L. Candido, L. Savoldi, R. Zanino, M. Zucchetti, D. Martelli, A. Venturini, Tritium Extraction from HCLL/WCLL/DCLL PbLi BBs of DEMO and HCLL TBS of ITER, IEEE Transactions on Plasma Science 99 (2019), 1-8.

[10] A. Venturini, F. Papa, M. Utili, N. Forgione, Experimental Qualification of New Instrumentation for Lead-Lithium Eutectic in IELLLO Facility, published on Fusion Engineering and Design (in press, corrected proof).

Participation to International Conferences

[1] 29th Symposium On Fusion Technology (SOFT2016), September 5-9, 2016, Prague, Czech Republic.

[2] 13th International Symposium on Fusion Nuclear Technology (ISFNT), September 25-29, 2017, Kyoto, Japan.

[3] 30th Symposium On Fusion Technology (SOFT), September 16-21, 2018, Giardini-Naxos, Italy.

PERSONAL SKILLS

Mother Language: Italian

Other Languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken Interaction	Spoken Production	
English	B2	C1	B2	B2	B2
French	A2	A2	A1	A1	A1
German	A1	A1	A1	A1	A1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Job-related Skills

- 2015 - passed the state exam and licensed as a profession engineer.
- Ability at working proficiently both indipendently and as a member of a team

Computer Skills

- Excellent knowledge Microsoft Office (Word, Excel, PowerPoint, Visio)
- Excellent knowledge in Relap5-3D and RELAP5/mod3.3 system codes, experience gained during the Ph.D. course
- Good knowledge of Catia v5, experience gained during the design of MaPLE facility and during the University course
- Good knowledge of SCALE6.1 neutronic code (particularly of Tsunami, Sampler and Triton modules), experience gained during the internship at KIT
- Good knowledge of SERPENT Monte Carlo code, experience gained during the internship at KIT
- Good knowledge of Matlab, experience gained within the framework of the MSc and PhD courses
- Good knowledge of LaTeX, experience gained in writing the MSc thesis
- Basic knowledge of STAR-CCM+

Relational Skills

Good team spirit and ability to work in groups and alone acquired during the entire course of study. Good communication skills and adaptation to multicultural environments.
Ability at speaking in public and able at talking and listening to people in a constructive manner.

Pistoia, 29/05/2020

Sincerely,

Ph.D. Alessandro Venturini