Academic CV – Luisa Petti

Personal information

Name: **Luisa Petti**
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Education

- **2009** – B.Sc. in Electronic Engineering (Grade: 110/110 cum laude), Politecnico di Milano, Milan, Italy. Thesis Title: "Development of a computational code for a quick calculation of the contrasts that are obtained in x-ray imaging". Referee: Prof. C. Guazzoni (Politecnico di Milano).
- **2011** – M.Sc. in Electronic Engineering (Grade: 110/110 cum laude), Politecnico di Milano, Milan, Italy. Thesis Title: "Development and application of x-ray optics suitable for microanalysis techniques". Referee: Prof. C. Guazzoni (Politecnico di Milano), Prof. C. Hierold, Prof. O. Kurapova (ETH Zürich).
- **2016** – PhD, ETH Zurich, Zurich, Switzerland. Thesis Title: "Metal oxide semiconductor thin-film transistors for flexible electronics". Referee: Prof. G. Tröster (ETH Zürich), Prof. T. Anthopoulos (Imperial College London).

Present appointments

- **Associate Professor** in Electronics (SSD: ING-INF/01) at the Faculty of Science and Technology, Free University of Bolzano-Bozen since March 2021.
- **Member of the Competence Center "Health of the Plants"** at the Free University of Bolzano-Bozen since December 2020.
- **Vice-head of the Sensing Technologies Laboratories (STL)** – an Interdisciplinary Research Group headed by Prof. Paolo Lugli currently including 1 Full Professor, 1 Associate Professor, 1 Assistant Professor, 1 Technologist, 3 Postdoctoral Researchers, 15 PhD Students, 1 Pre-Doctoral Researcher, 1 Bachelor and 2 Master Students – at the Faculty of Science and Technology, Free University of Bolzano-Bozen since March 2019.
- **Member of the Scientific Committee ("Collegio Docenti") of the PhD program** *Advanced Systems Engineering* (ASE) of the Faculty of Science and Technology, Free University of Bolzano-Bozen since April 2019.
- **Responsible for the Sensor System Technology (SST) Laboratories at NOI Techpark** at the Faculty of Science and Technology of the Free University of Bolzano-Bozen since March 2021.
- **Member of the Quality Assurance Group** ("Assicurazione Qualità-AQ") for the B.Sc. in *Wood Engineering* (L-9 Wood) at the Faculty of Science and Technology of the Free University of Bolzano-Bozen since April 2019.
- **Member of Various Faculty Hiring Committees** for Research

Assistant (AR), Technologist Positions, Commissioned Researchers and Adjunct Professors at the Faculty of Science and Technology of the Free University of Bolzano-Bozen since July 2019.

- **Supervisor of 3 Ph.D. students** in *Advanced Systems Engineering* at the Faculty of Science and Technology of the Free University of Bolzano Bozen since November 2019.
- **Co-supervisor of 3 Ph.D. students** in *Advanced Systems Engineering* at the Faculty of Science and Technology of the Free University of Bolzano Bozen since November 2019.
- **Supervisor of 1 Postdoctoral Researcher** (AR) at the Faculty of Science and Technology of the Free University of Bolzano Bozen from January 2021.
- **Academic Tutor and Referee** of 1 M.Sc. students in *Food Sciences for Innovation and Authenticity* and 1 B.Sc. students in *Wood Engineering* at the Faculty of Science and Technology of the Free University of Bolzano-Bozen since March 2020.
- **Lecturer** of the Course "Elektronische Qualität und Diagnose" at the B.Sc. in Wood Engineering (L9-wood) and at the B.Sc. of Industrial Engineering (L9) since September 2019.
- **Member of the Flexible Electronics and Display Committee** of the IEEE Electron Device Society since January 2020.
- **Associate Editor** of *Frontiers in Electronics* (Specialty Section: Flexible Electronics) since August 2020.
- **Review Editor** of Frontiers in Nanotechnology since May 2020.
- **Member of the Editorial Board** of MDPI Sensors since April 2020.
- **Guest Editor** of the *Frontiers in Electronics* Research Topic "Flexible Oxide Semiconductor Based Thin-Film Transistors and Circuits" since November 2020.
- **Technical Co-Chair** of IEEE International Flexible Electronics Technology Conference (IFETC) 2021.
- **Member of the Technical Program Committee** (TPC) of IEEE Electron Device Technology Manufacturing (EDTM) 2021.

Professional experience

From/to	Job title	Name of academic Institution	Academic level	Responsibilities
03/2011 – 09/2011	Student research assistant	ETH Zurich, Zurich, Switzerland	M.Sc.	●Research in the areas of design, micro-fabrication, and characterization of x-ray refractive optical micro-lenses.
09/2011 – 12/2011	Student research assistant	Politecnico di Milano, Milan, Italy	M.Sc.	●Research in the areas of x-ray fluorescence micro-analysis of biological samples.
02/2012 – 08/2016	Research assistant	ETH Zurich, Zurich, Switzerland	Ph.D.	●Research in the areas of flexible thin-film transistors, sensors, memories, and integrated circuits based on metal oxide and organic semiconductors. ●Demonstrated first flexible vertical indium gallium zinc oxide transistors. ●Authored and co-authored >58 publications in >21 peer-reviewed journals.

				●Coordinated the preparation of an extensive and well-cited review on flexible metal oxide semiconductor electronics (53 pages, 363 references). ●Presented >7 contributed and invited talks at international top conferences. ●Collaborated with >16 academic and industrial partners over >6 countries. ●Main reader and responsible for semester and master thesis supervision. ●Involved in >3 European and Swiss third-party projects.
02/2014 – 08/2014	Visiting research assistant	Imperial College London, London, UK	Ph.D.	●Research in the areas of flexible solution-processed thin-film transistors and complementary digital circuits.
09/2014 – 12/2014	Intern	Apple Incorporated, Cupertino, US	Ph.D.	●Developed new designs and fabrication processes for next-generation flexible and stretchable display products. ●Co-inventor of an international patent application on stretchable displays.
09/2016 – 12/2017 (from 10/16 at 10%)	Research Associate	ETH Zurich, Zurich, Switzerland	Postdoc	●Research in the areas of flexible short-channel thin-film transistors and complementary analog circuits based on metal oxide semiconductors. ●Demonstrated shortest channel length ever reported for flexible transistors. ●Authored and co-authored >16 publications in >14 peer-reviewed journals. ●Responsible for Ph.D. student supervision and cleanroom user trainings. ●Scientific evaluator of European H2020 FET-OPEN and ICT projects.
10/2016 – 12/2017	Scientist	Cambridge Display Technology Limited, Godmanchester, UK	Postdoc	●Responsible for the fabrication, characterization, and integration of flexible printed organic thermoelectric generators for industrial IoT applications. ●Responsible for the electrochemical and physical characterization of novel materials for thin-film flexible polymer-based batteries. ●Responsible for the integration of flexible organic batteries and solar cells for medical wearable, healthcare, and smart home IoT applications. ●Co-inventor of a patent on gel

				electrolytes for flexible batteries. ●Involved in the 3rd Horizon group for a long-term planning of CDT's research and development activities.
12/2017 – 06/2018	Research Engineer	FlexEnable Limited, Cambridge, UK	Postdoc	●Responsible for the electrical and optical characterization of flexible organic liquid crystal displays (OLCDs). ●Responsible for the management of internal, customer and European research projects on flexible OLCDs. ●Dark-room manager.
07/2018 – 02/2021	Fixed-term research assistant	Free University of Bolzano-Bozen, Bolzano, Italy	Postdoc	●Research in the areas of flexible, printed, and environmentally friendly electronics (sensors, biosensors, energy harvesters, actuators, and integrated sensor systems). ●Responsible for the management of internal, regional, and national research projects, as well as of for the management of the laboratories (rooms E1.21, E.1.23, E2.11). ●Responsible for postdoc, Ph.D. and master student supervision and training. ●Responsible for the setup of the new Sensor System Technology Laboratories at NOI Techpark. ●Lecturer for electronics and sensor courses at B.Sc. and M.Sc. level. ●Authored and co-authored >17 publications in >10 peer-reviewed journals. ●Presented >6 invited talks at international top conferences and webinars. ●Collaborated with a wide range of academic and industrial partners both locally, nationally, and internationally. ●Involved in a wide range of third-mission public activities (newspapers, radio, TV services). ●Actively participated to the editoral boards of different journals and to the technical and scientific committee of various international top conferences.

Participation in exhibitions, competitions and awards

Exhibitions:

- Organization and participation to Long Night of Research 2019, Free University of Bolzano-Bozen, Bolzano, Italy, September 2019.
- Participation to AquaFarm/NovelFarm 2020 exhibition, Fiera di Pordenone, Pordenone, Italy, February 2020.

Competitions:

- Participation to the competition LDR (*il Linguaggio Della Ricerca*) with the project "La Fisica della Vita" together with a group of students of the ITIS Leonardo Da Vinci in Carpi, Italy, May-June 2019 and 2020.

Awards:

- Awarded with the gold medal for the top 40 B.Sc. graduates 2008-2009, Politecnico di Milano, Milan, Italy, April 2011.
- Awarded with 2nd prize for the most innovative solution at the European Society for Precision Engineering and Nanotechnology (EUSPEN) Challenge 2011, University of Cambridge, Cambridge, UK, July 2011.
- Awarded with the best student paper award at the International Thin-Film Transistor Conference 2013, University of Tokyo, Tokyo, Japan, March 2013.
- Awarded with the ETH medal for outstanding doctoral theses in 2016, ETH Zurich, Zurich, Switzerland, November 2016.
- Awarded with the IEEE EDS Early Career Award 2019, IEEE Electron Devices Society, San Francisco, US, December 2019.

Experience in academic teaching

Teaching (last 5 years) at Free University of Bolzano-Bozen:

Academic year 2018/2019

- Lecturer and course responsible of *Physik* (6 CFU, 30 hours in German), B.Sc. in Wood Engineering (L9-wood); Evaluations: *Am I generally satisfied with the course taught? Generally Yes + Definitely Yes: 100%.*

Academic year 2019/2020

- Lecturer and course responsible of *Elektronische Qualität und Diagnose* (6 CFU, 54 hours in German), B.Sc. in *Wood Engineering* (L9-wood); Evaluations: *No evaluations available as the course has been attended by less than 5 students.*
- Lecturer of *Sensors and Biosensors for Food Processing* (6 CFU, 6 hours in English); M.Sc. in *Food Sciences for Innovation and Authenticity*; Evaluations: *No evaluations available as the course has been attended by less than 5 students.*
- Lecturer at the *15th International Summer Schools on Nanosciences & Nanotechnologies, Organic Electronics & Nanomedicine (ISSON20)*; held online on 11th July 2020.

Academic year 2020/2021

- Lecturer and course responsible of *Elektronische Qualität und Diagnose* (6 CFU, 60 hours in German), B.Sc. in *Wood Engineering* (L9-wood) and *B.Sc. in Mechanical Engineering* (L9); Evaluations: *will be available after exam session.*
- Lecturer and course responsible of *Introduction to printing technologies and flexible components* (3 CFU, 30 hours in English), P.hD. in *Advanced Systems Engineering*; Evaluations: *will be available*

after exam session.

Post-doctoral Researcher Supervision (last 5 years) at Free University of Bolzano-Bozen:

Main supervisor of the following "assegno di ricerca" (AR):

- Pietro Ibba, Postdoctoral researcher, Free University of Bozen-Bolzano, from January 2021.

PhD Student Supervision (last 5 years) at Free University of Bolzano-Bozen:

Main supervisor of the following theses:

- Mattia Petrelli, "Printed Wearable Sensors for Real-Time Monitoring of Muscular Activity", Ph.D. in *Advanced Systems Engineering*, 35th cycle, Free University of Bolzano-Bozen, from November 2019 to now.
- Mukhtar Ahmad, "Biodegradable Wireless Sensors for Precision Agriculture", Ph.D. in *Advanced Systems Engineering*, 35th cycle, Free University of Bolzano-Bozen, from November 2019 to now.
- Saleh Hamed, "Sustainable plant-based sensors for health plant monitoring", Ph.D. in *Advanced Systems Engineering*, 36th cycle, Free University of Bolzano-Bozen, from November 2020 to now.

Co-supervisor of the following theses

- Elia Scattolo, "Advanced Photonic Nanostructures for Optical Sensing", Ph.D. in *Advanced Systems Engineering*, 35th cycle, Free University of Bolzano-Bozen, from November 2019 to now.
- Raheel Riaz, "Smart Wearable Device for Mountain Sports and Rescue Activities", Ph.D. in *Advanced Systems Engineering*, 35th cycle, Free University of Bolzano-Bozen, from November 2019 to now.
- Arvind Gurusekaran, "Development of coatings and components on polymers suitable for space applications", Ph.D. in *Advanced Systems Engineering*, 36th cycle, Free University of Bolzano-Bozen, from November 2020 to now.

Bachelor/Master Student Supervision (last 5 years) at Free University of Bolzano-Bozen:

Academic tutor and referee for the following bachelor thesis:

- Academic year 2020/2021
  Elena Helfer, "Identificazione del marciume all´interno di tronchi di legno con tecniche di deep learning applicate ad immagini tomografiche", B.Sc. in *Wood Engineering*, Free University of Bolzano-Bozen, from June 2020 to now.

Referee for the following master thesis:

- Academic year 2020/2021
  Manuel Wegmann, "Chestnut Quality Assessment by Bioimpedance", M.Sc. in *Food Sciences for Innovation and Authenticity*, Free University of Bolzano-Bozen, from October 2020 to now.

Other academic responsibilities

Internal Appointments at Free University of Bolzano-Bozen

- **Responsible for the Sensor System Technology (SST) Laboratories at NOI Techpark** at the Faculty of Science and Technology of the Free University of Bolzano-Bozen (March 2019 – now).
- **Member of the Competence Center "Health of the Plants"** at

the Free University of Bolzano-Bozen (December 2020 – now).

- **Member of the Scientific Committee ("Collegio Docenti") of the PhD program** *Advanced Systems Engineering* (ASE) of the Faculty of Science and Technology, Free University of Bolzano-Bozen (April 2019 – now).
- **Member of the Quality Assurance Group** ("Assicurazione Qualità-AQ") for the B.Sc. in *Wood Engineering* (L-9 Wood) at the Faculty of Science and Technology of the Free University of Bolzano-Bozen (April 2019 – now).
- **Member of Various Faculty Hiring Committees** for Research Assistant (AR), Technologist Positions, Commissioned Researchers and Adjunct Professors at the Faculty of Science and Technology of the Free University of Bolzano-Bozen (July 2019 – now).
- **Member of the Technical Committee for the Purchase** of a Probe Station and a Parameter Analyzer at the Faculty of Science and Technology (April 2019 – February 2020).
- **Laboratory Responsible** (Rooms: E1.21, E.1.23, E2.11) at the Faculty of Science and Technology of the Free University of Bolzano-Bozen (March 2019 – March 2021).

External Appointments at International Level

- **Member of the Flexible Electronics and Display Committee** of the IEEE Electron Device Society (January 2020 – now).
- **Founding Member of IEEE EDS Women in Engineering (WIE) Section** (November 2020 – now).

Responsibilities for Organizing Conferences

- **Member of the Organizing Committee** at the 11th Body Sensor Network Conference at ETH Zurich (17-18 June 2014).
- **Chairperson** of the session *Advanced Application of TFTs*, at the International Workshop on Active-Matrix Flat Panel Displays and Devices (AM-FPD14), Kyoto, Japan (2-4 July 2014)
- **Chairperson** of the session *Workshop on OTFTs, Sensors & Circuits 2*, at the International Symposium on Flexible and Organic Electronics (ISFOE19), Thessaloniki, Greece (1-4 July 2019).
- **Organizer** of the Workshop *Technologies for the Futures*, NOI Techpark Bolzano, Bolzano, Italy (28th September 2020).
- **Chairperson** of the focused session *Emerging Technologies for Flexible and Printed Energy Autonomous Sensing Systems* at the IEEE Sensors Conference 2020, online (25-28 October 2020).
- **Technical Co-Chair** of the *IEEE International Flexible Electronics Technology Conference (IFETC) 2021*, hybrid (8-11 August 2021).

Memberships

Membership of Academic or Professional Bodies

- **Member** of the Institute of Electrical and Electronics Engineering (IEEE) since 2012.
- **Member** of the IEEE Young Professionals (YP) since 2014.
- **Member** of the IEEE Electron Device Society (EDS) since 2015.
- **Member** of the IEEE Women in Engineering Society (WIE) since 2015.
- **Member** of the IEEE Solid-State Circuits Society (SSCS) since 2016.
- **Member** of the Italian Electronic Society (SIE) since 2021.

Membership of Editorial Boards

- **Associate Editor** of *Frontiers in Electronics* (August 2020 – now).
- **Review Editor** of Frontiers in Nanotechnology (May 2020 – now).
- **Member of the Editorial Board** of MDPI Sensors (April 2020 – now)
- **Guest Editor** of the *Frontiers in Electronics* Research Topic "Flexible Oxide Semiconductor Based Thin-Film Transistors and Circuits" (November 2020 – now).
- **Guest Editor** of the special issue of "Flexible and Stretchable Electronic Sensors" in MDPI Sensors (2019-2020).
- **Reviewer** for the following international peer-reviewed journals: IEEE Transaction on Electron Devices, IEEE Access, IEEE Electron Device Letters, IEEE Journal of the Electron Devices Society, IEEE Access, SCIENCE Robotics, ACS Applied Materials & Interfaces, IOP Flexible and Printed Electronics, IOP Semiconductor Science and Technology, IOP Journal of Physics D: Applied Physics, IOP Journal of Physics Communication, IOP Nanotechnology, Elsevier Carbon, Elsevier Organic Electronics, Elsevier Applied Materials Today, Elsevier Solid-State Electronics, Elsevier Material Chemistry and Physics, Elsevier Vacuum, Elsevier Material Science in Semiconductor Processing, Elsevier Surface and Coatings Technology, International Journal of Circuit Theory and Applications, ASTM Materials Performance and Characterization, SAGE Textile Research Journal, MDPI Sensors, MDPI Nanomaterials, MDPI Biosensors, MDPI Coatings, International Journal of Circuit Theory and Applications, Cambridge Elements, Frontiers in Nanotechnology, and several other journals.

Member of Scientific Committees for International Conferences

- **Member of the Scientific Committee** of the *IEEE Flexible and Printed Sensors (FLEPS) Conference* 2020, online (17-19 August 2020).
- **Member of the Technical Program Committee** (TPC) of the *IEEE Electron Device Technology Manufacturing (EDTM) Conference* 2021, online (8-11 April 2021).
- **Member of the Scientific Committee** of the IEEE International Flexible Electronics Technology Conference (IFETC) 2021.

Member of Commission of Trust

- **Scientific Evaluator** of the H2020 FET-OPEN RIA Call 2016-2017 "Novel Ideas for Radically New Technologies" and of the H2020 ICT-2018-2 Call "Flexible and Wearable Electronics".
- **Vice-Chair** (quality control) of the H2020 FET-OPEN RIA Call 2018-2020 "FET-Open Challenging Current Thinking".
- **Scientific Evaluator** of the Deutsche Forschungsgemeinschaft (DFG)".

Research

Research Projects (last 5 years):

In the last 5 years, in the context of electronics at Free University of Bolzano-Bozen, Prof. Luisa Petti is principal investigator (PI) of:

Date granted	Award Holder(s)	Funding Body	Title	Total Budget
01/07/2020	Luisa Petti (coordinator)	UNIBZ (ID call 2020)	New Directions in Statistical Methods for Bio-impedance Analysis	100 k€

			of Fruit Ripeness (BIOFRUIT)	
01/07/2019	Luisa Petti (coordinator)	UNIBZ (RTD call 2019)	Environmentally friendly Electronics on Paper (Eyre)	13,5 k€

In the last 5 years, in the context of flexible electronics and sensor systems at Free University of Bolzano-Bozen, Prof. Luisa Petti is co-investigator or team member of the following research projects:

Date granted	UNIBZ Award Holder(s)	Funding Body	Title	Total Budget
01/11/2020	Niko Münzenrieder	Royal Society (International Exchanges Scheme 2020)	Integrated flexible sensor conditioning circuits for high performance wearables (ICC)	13,396 k€
01/09/2020	Paolo Lugli	UNIBZ (ID call 2020)	Discovering Complexity: Advanced Technology for Narrative Education and System Thinking (AT-NE-ST)	163 k€
01/07/2020	Giuseppe Cantarella (coordinator)	UNIBZ (RTD call 2020)	Flexible Electronics-integrated Micromachines (FERMI)	13,7 k€
01/09/2019	Niko Münzenrieder	DFG FFlexCom project	Wireless Indium-Gallium-Zink-Oxide Transmitters and Devices on Mechanically Flexible Thin-Film Substrates II (WISDOM II)	283 k€
01/01/2019	Paolo Lugli	EFRE-FESR-2014-2020	Smart textile for monitoring muscles activity (STEX)	623,9 k€
01/02/2018	Paolo Lugli (coordinator)	UNIBZ (ID call 2017)	Sustainable Smart Parasites (SSP)	198 k€
01/01/2018	Paolo Lugli (coordinator)	EFRE-FESR-2014-2020	Sensing Laboratory (SensLab)	1.493,974 k€

In the last 5 years, in the context of electronics at FlexEnable Ltd, Prof. Luisa Petti participated to the following research project:

Date granted	Award Holder(s)	Funding Body	Title	Total Budget
01/01/2018	Patrick Too	European Commission (H2020-ICT-30-2017)	Laser manufacturing of 3D nanostructured optics using advanced photochemistry (PHENOmenon)	3.889,2 k€

Summary of Research Activities:

Prof. Petti's research activities in the field of flexible and printed electronic devices, circuit, sensors, biosensors, and sensor systems is based on a wide range of regional, national, and international collaborations from both academic and industrial partners. Just to mention a few, these collaborations include Microgate Srl, Texmarket Srl, Microtec Srl, Kerr Italy, 2610 Srl, Thales Alenia, Eurac Research, Fondazione Bruno Kessler, Istituto

Italiano di Tecnologia, Università di Trento, Università di Verona, Università di Modena e Reggio Emilia, Università di Roma Tor Vergata, Politecnico di Torino, Università di Cagliari, Università dell'Aquila, Technische Universität München, ETH Zurich, EPFL, Universidad de Granada, University of Oslo, TUD, University of Sussex, FlexEnable, University of Surrey, University of Oxford, Johannes Kepler University Linz, Hemholtz Zentrum Dresden Rossendorf, Technical University of Denmark.

Publications

Luisa Petti is author of **82 SCOPUS listed publications**, and co-inventor of 2 patent applications (1 granted). According to SCOPUS (Google Scholar) her **H-Index is 23 (24)**, with a **total number of citations of 1720 (2190)**. Main topics of research: a) flexible thin-film transistors and circuits, b) thin-film flexible sensors and biosensors, c) integrated flexible and hybrid sensor systems, d) application of sensor systems to environmental monitoring, precision agriculture, and healthcare applications.

Bibliometric Indexes - Prof. Luisa Petti		
	Values for ING-INF/01 for associate professors	***Values for Luisa Petti (according to SCOPUS)***
Number of publications last 5 years	*9*	***40***
Number of citations last 10 years	*308*	***1720***
H-index last 10 years	*10*	***23***

Publications in the last 9 years (2012-2021):

a. Journal articles in refereed academic journals *(main author in Italics*, significant publication with *)

1. *T. Kinkeldei*, C. Zysset, N. Münzenrieder, **L. Petti**, and G. Tröster, "Tube Integrated Electronic Nose System on a Flexible Polymer Substrate," in Sensors 12 (10), pp. 13684-13693, 2012, doi: 10.3390/s121013681.
2. **C. Zysset*, N. Münzenrieder, **L. Petti**, L. Büthe, G. A. Salvatore, and G. Tröster, "IGZO TFT-Based All-Enhancement Operational Amplifier Bent to a Radius of 5 mm," in Electron Device Letters 34 (11), pp. 1394-1396, 2013, doi: 10.1109/LED.2013.2280024.
3. *G. A. Salvatore*, N. Münzenrieder, C. Barraud, **L. Petti**, C. Zysset, L. Büthe, K. Ensslin, and G. Tröster, "Fabrication and Transfer of Flexible Few-Layers MoS_2 Thin Film Transistors to Any Arbitrary Substrate," in ACS Nano 7 (10), pp. 8809-8815, 2013, doi: 10.1021/nn403248y.
4. *C. Perumal*, K. Ishida, R. Shabanpour, B. K. Boroujeni, **L. Petti**, N. Münzenrieder, G. A. Salvatore, C. Carta, G. Tröster, and F. Ellinger, "A Compact a-IGZO TFT Model Based on MOSFET SPICE Level=3 Template for Analog/RF Circuit Designs," in IEEE Electron Device Letters 34 (11), pp. 1391-1393, 2013, doi: 10.1109/LED.2013.2279940.

5. *C. Zysset*, T. Kinkeldei, N. Münzenrieder, **L. Petti**, G. A. Salvatore, and G. Tröster, "Combining electronics on flexible plastic strips with textiles," in Textile Research Journal 83 (11), pp. 1130-1142, 2013, doi: 10.1177/0040517512468813.
6. **N. Münzenrieder*, C. Zysset, L. Petti, T. Kinkeldei, G. A. Salvatore, and G. Tröster, "Flexible self-aligned amorphous InGaZnO thin-film transistors with sub-micrometer channel length and a transit frequency of 135 MHz," in IEEE Transactions on Electron Devices 60 (9), pp. 2815-2820, 2013, doi: 10.1109/TED.2013.2274575.
7. *C. Zysset*, N. Nasseri, L. Büthe, N. Münzenrieder, T. Kinkeldei, **L. Petti**, S. Kleiser, G. A. Salvatore, M. Wolf and, and G. Tröster, "Textile Integrated Sensors and Actuators for Near-Infrared Spectroscopy," in Optics Express 21 (3), pp. 3213-3224, 2013, doi: 10.1364/OE.21.003213.
8. *N. Münzenrieder*, C. Zysset, **L. Petti**, T. Kinkeldei, G. A. Salvatore, and G. Tröster, "Room temperature fabricated flexible NiO/IGZO pn diode under mechanical strain," in Solid-State Electronics 87, pp. 17-20, 2013, doi: 10.1016/j.sse.2013.04.030.
9. *N. Münzenrieder*, C. Zysset, **L. Petti**, T. Kinkeldei, G. A. Salvatore, and G. Tröster, "Flexible double gate a-IGZO TFT fabricated on free standing polyimide foil," in Solid-State Electronics 84, pp. 198-204, 2013, doi: 10.1016/j.sse.2013.02.025.
10. **G. A. Salvatore*, N. Münzenrieder, T. Kinkeldei, **L. Petti**, C. Zysset, I. Strebel, L. Büthe, and G. Tröster, "Wafer-scale design of lightweight and transparent electronics that wraps around hair," in Nature Communications 5 (2982), pp. 1-8, 2014, doi: 10.1038/ncomms3982.
11. **N. Münzenrieder*, P. Voser, **L. Petti**, C. Zysset, L. Büthe, C. Vogt, G. A. Salvatore, and G. Tröster, "Flexible Self-Aligned Double-Gate IGZO TFT," in IEEE Electron Device Letters 35 (1), pp. 69-71, 2014, doi: 10.1109/LED.2013.2286319.
12. **N. Münzenrieder*, G. A. Salvatore, **L. Petti**, C. Zysset, L. Büthe, C. Vogt, G. Cantarella, and G. Tröster, "Contact resistance and overlapping capacitance in flexible sub-micron long oxide thin-film transistors for above 100 MHz operation," in Applied Physics Letters 105 (26), p. 263504, 2014, doi: 10.1063/1.4905015.
13. ***L. Petti**, N. Münzenrieder, G. A. Salvatore, C. Zysset, T. Kinkeldei, L. Büthe, and G. Tröster, "Influence of mechanical bending on flexible InGaZnO-based ferroelectric memory TFTs," in IEEE Transactions on Electron Devices 61 (4), pp. 1085-1092, 2014, doi: 10.1109/TED.2014.2304307.
14. **D. Karnaushenko*, N. Münzenrieder, D. D. Karnaushenko, B. Koch, A. K. Meyer, S. Baunack, **L. Petti**, G. Tröster, D. Makarov, and O. G. Schmidt, "Biomimetic Microelectronics for Regenerative Neuronal Cuff Implants," in Advanced Materials 27 (43), pp. 6797-6805, 2015, doi: 10.1002/adma.201503696.
15. **N. Münzenrieder*, G. Cantarella, C. Vogt, **L. Petti**, L. Büthe, G. A. Salvatore, Y. Fang, R. Andri, Y. Lam, R. Libanori, D. Widner, A. Studart, and G. Tröster, "Stretchable and Conformable Oxide Thin-Film Electronics," in Advanced Electronic Materials 1 (3), p. 1400038, 2015, doi: 10.1002/aelm.201400038.
16. **G. Cantarella*, N. Münzenrieder, **L. Petti**, C. Vogt, L. Büthe, G. A. Salvatore, A. Daus, and G. Tröster, "Flexible In-Ga-Zn-O Thin-Film

Transistors on elastomeric substrate bent to 2.3%," in IEEE Electron Device Letters 36 (5), pp. 475-477, 2015, doi: 10.1109/LED.2015.2442271.
17. *_F. Bottacchi_, **L. Petti**, F. Späth, I. Namal, G. Tröster, T. Hertel, and T. D. Anthopoulos, "Polymer-sorted (6,5) single-walled carbon nanotubes for solution-processed low-voltage flexible microelectronics," in Applied Physics Letters 106 (19), p. 193302, 2015, doi: 10.1063/1.4921078.
18. ***L. Petti***, A. Frutiger, N. Münzenrieder, G. A. Salvatore, L. Büthe, C. Vogt, G. Cantarella, and G. Tröster, "Flexible quasi-vertical In-Ga-Zn-O thin-film transistor with 300 nm channel length," in IEEE Electron Device Letters 36 (5), pp. 475-477, 2015, doi: 10.1109/LED.2015.2418295.
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- **L. Petti**, P. Lugli, P. Ibba, M. Rivola, "Lebensmittelqualität mit Strom messen? Reifetest für neue Analysemethode", Academia, 14th April 2020.
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- **L. Petti**, "Frauen in technischen Berufen", Die Südtiroler Frau, 1st June 2020.
- **L. Petti**, "Prämiert", Südtiroler Wirtschaftszeitung, 10th January 2020.
- **L. Petti**, "La maglietta che misura la fatica e le altre invenzioni del Senslab, il nuovo laboratorio Unibz al NOI Techpark", Salto.bz, 6th November 2020.
- **L. Petti**, P. Lugli and E. Avancini, "Tecnologie per il futuro: ecco il «Senslab», il nuovo laboratorio di unibz al NOI", Alto Adige Innovazione, 29th September 2020.
- **L. Petti**, P. Lugli and E. Avancini, "Technologien für die Zukunft", Südtirol News, 29th September 2020.

Participation to Radio/TV Services:

- **L. Petti** and N. Münzenrieder, in Südtirol forscht, Radio Südtirol, Bolzano, 27th February 2020.
- **L. Petti** and P. Lugli, "Al Senslab di Bolzano di studiano i sensori per la società dei big data", in RAI TG Alto Adige, 29th December 2020.
- **L. Petti** and P. Lugli, "Al Senslab di Bolzano di studiano i sensori per la società dei big data", in RAI TG Leonardo, 1st December 2020.

Further data

Invited Presentations of Prof. Petti:

1. **L. Petti**, N. Münzenrieder, C. Zysset, T. Kinkeldei, G. A. Salvatore, and G. Tröster, "Mechanically flexible InGaZnO-based ferroelectric memory thin-film-transistors," in International Device Physics Young Scientists Symposium (IDYS), Nara, Japan, March 2013.
2. **L. Petti**, P. Aguirre, N. Münzenrieder, G. A. Salvatore, C. Zysset, A. Frutiger, L. Büthe, C. Vogt, and G. Tröster, "Mechanically flexible vertically integrated a-IGZO thin-film transistors with 500 nm channel length fabricated on free standing plastic foil," in Wagner's Group Seminar, Princeton University, US, December 2013.
3. **L. Petti**, N. Münzenrieder, and G. Tröster, "Oxide semiconductor thin-film transistors for flexible electronics," in IIN Seminar, IFW Dresden, Dresden, Germany, July 2014.
4. **L. Petti**, N. Münzenrieder, G. A. Salvatore, C. Zysset, T. Kinkeldei, L. Büthe, C. Vogt, and G. Tröster, "Flexible electronics based on oxide

semiconductors," in 21st International Workshop of the IEEE on Active-Matrix Flat-Panel Displays and Devices (AM-FPD), Kyoto, Japan, July 2014.

5. **L. Petti**, N. Münzenrieder, F. Bottacchi, H. Faber, C. Zysset, G. Cantarella, C. Vogt, L. Büthe, T. D. Anthopoulos, and G. Tröster, "Flexible integrated circuits on plastic substrates," in 581. WE-Heraeus-Seminar on Flexible, Stretchable and Printable High-Performance Electronics, Bad Honnef, Germany, January 2015.
6. **L. Petti**, G. Cantarella, and N. Münzenrieder, "Flexible InGaZnO Thin-Film Transistors: Towards High-Frequency and High-Gain Analog Systems on Plastic," in International Symposium on Flexible and Organic Electronics (ISFOE19), Thessaloniki, Greece, July 2019.
7. **L. Petti**, "Flexible InGaZnO Thin-Film Transistors: Towards High-Frequency and High-Gain Analog Systems on Plastic," in Electronic-based Systems Event, NOI Techpark, Bolzano, Italy, October 2019.
8. **L. Petti**, B. Shkodra, P. Ibba, B. D. Abera, E. Avancini, G. Cantarella, N. Münzenrieder, and P. Lugli "Flexible and Printed Electronics: From Materials to Sensor Systems", in Arias's Research Group Seminar, University of California Berkeley, Berkeley, US, December 2019.
9. **L. Petti**, G. Cantarella, N. Münzenrieder, and P. Lugli, "Flexible Hybrid Electronics: From Materials to Sensor Systems," in International Symposium on Flexible and Organic Electronics (ISFOE20), online, July 2020.
10. **L. Petti**, B. Shkodra, A. Douaki, P. Ibba, M. Rivola, C. Ebner, M. Costa Angeli, M. Petrelli, E. Avancini, and P. Lugli, "Flexible and Printed Electronics: Overview of Current Activities at the Free University of Bozen-Bolzano," Workshop Technologies for the Future, NOI Techpark Bolzano, Bolzano, Italy, September 2020.
11. **L. Petti**, R. Monsorno, P. Lugli, "Sensor System Technology Laboratory: Overview of Current Activities for Textile Electronics", Webinar Textile Comfort, online, December 2020.
12. **L. Petti**, G. Cantarella, J. C. Costa, N. S. Münzenrieder, "Bendable Metal Oxide Thin-Film Transistors and Circuits for Analog Electronics Applications", SPIE Photonics West, online, March 2021.

Entrepreneurship

Luisa Petti is co-inventor of one granted patent and one deposited patent application:

- H. S. Kim, Y. Y. Hsu, P. S. Drzaic, **L. Petti**, "Electronic Devices with Soft Input-Output," US Patent No 9, 841, 548, 2017.
- T. Kugler, M.C. O'Sullivan, **L. Petti**, "Separator", UK Patent Application GB 2566991, 2019.

Language competence

Italian: Mother Tongue
English: C1 (IELTS test, Cambridge, June 2018).
German: C1 (Language center of the Free University of Bozen-Bolzano, Bolzano, October 2018).

Date

1st March 2021

Signature