

## *Curriculum vitae*

### **RESEARCH & TEACHING INTERESTS**

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As an experimental engineer and physicist, my research seeks to elucidate and exploit interaction of high frequency waves (microwave or terahertz) with light or matter down to the limits imposed by quantum mechanics. I seek to invent and innovate future terahertz technologies by on-chip integration and photonic design, e.g. in (quantum) sources, high-field emitters, novel metrology, sensing and reconfigurable photonics.

### **PERSONAL INFORMATION**

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**Birth details** 15. December 1988, Brasov, Romania  
**Personal details** married, one wonderful daughter

### **EDUCATION**

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**10/ 2013 – 3/2018** **Ph.D. in Physics**, ETH Zurich, Switzerland (defense date: 23/03/2018)  
Faculty Advisor: Jérôme Faist, Prof. of Physics  
Project: Terahertz quantum metrology with ultra-short pulses.

**10/2011 – 6/2013** **M.Sc. in Optics and Photonics with distinction (1.1/1.0)**, KIT, Germany  
**9/2010 – 7/2011** **ERASMUS exchange year**, EPF Lausanne, Switzerland  
**10/2007 – 8/2010** **B.Sc. in Electr. Eng. and Information Technology (1.6/1.0)**, KIT, Germany

### **RESEARCH EXPERIENCE**

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**1/2022 – present** **Tenure Track Assistant Professor in Microengineering**  
EPF Lausanne, Switzerland  
Head of Hybrid Photonics Laboratory (HYLAB)

**1/2022 – present** **Research Associate in Applied Physics**  
John A. Paulson School of Engineering and Applied Sciences, Harvard, USA  
Faculty Advisor: Federico Capasso, Prof. of Applied Physics

**3/2019 – 12/2021** **Postdoctoral Fellow in Applied Physics**  
John A. Paulson School of Engineering and Applied Sciences, Harvard, USA  
Faculty Advisor: Federico Capasso, Prof. of Applied Physics  
Project: High-speed tunable metasurfaces and integrated silicon photonics devices.

**11/2018 – 2/2019** **Visiting Postdoctoral Fellow in Quantum Opto-electronics**  
Ultrafast Quantum Electronics and Photonics, Regensburg University, Germany  
Faculty Advisor: Rupert Huber, Prof. of Physics  
Project: Quantum light from switched ultra-strongly coupled light-matter systems.

**3/2018 – 3/2019** **Postdoctoral Fellow in Quantum Opto-electronics**  
Institute for Quantum Electronics, ETH Zurich, Switzerland  
Faculty Advisor: Jérôme Faist, Prof. of Physics  
Project: Integrated electro-optics at terahertz frequencies for quantum cavity electro-dynamics.

**7/2012-9/2012** **Visiting Research Assistant in Optics**

IBM Research Zurich, Switzerland

Advisor: Armin Knoll, Dr.

Project: Laser scanning optical imaging system of single gold nano-particles.

6/2009-8/2009

**Visiting Research Assistant in Microfluidics**

Institute for Integrative Biosystems Research, Vanderbilt University, USA

Advisor: John Wikswo, Prof. Dr.

Project: Development of a microfluidic mixing device.

## TEACHING & ADVISING EXPERIENCE

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### Lecturer

Transducers for classical and quantum applications, EPFL (Microengineering and Electrical Engineering, English), course offered for the first time in fall 2022.

Fundamentals of integrated photonic devices, EPFL (Microengineering and Electrical Engineering, English), course offered for the first time in fall 2023.

### Teaching Assistant

Undergraduate courses: Higher mathematics 1 and 2 for Physicists, KIT (Physics, 15 students, German); Fields and waves, KIT (Electrical Engineering, 12 students, German); Electronic circuits, KIT (Electrical Engineering, 12 students, German); Signals and systems, EPFL (Electrical Engineering, 6 students, English); Analysis 1 and 2, EPFL, (Physics, 6 students, German); Physics 1 and 2, ETHZ, (Electrical Engineering, 20 students, German, English); Quantum mechanics, ETHZ (Electrical Engineers, 35 students, English);

Graduate courses: Quantum optics, ETHZ (Physics, 15 students, English); Optical properties of semiconductors, ETHZ (Physics, 10 students, English). Revised material.

### Advising Experience

HYLAB: Currently advising five PhD students (Francesco Bertot, Yazan Lampert, Zahra Basiri, Aleksei Gaier and Xuhui Cao) and two postdocs (Jiawen Liu and Alessandro Tomasino), HYLAB, EPFL (**2022-present**) and a remote team of one PhD students (Alexa Herter at Institute for Quantum Electronics, ETH Zurich) (**2021-present**).

Past appointments: Advised a team of two postdocs (Maryna Meretska, Michele Tamagnone), one Ph.D. student (Noah Rubin) and one undergraduate student (Sydney Mason), Capasso laboratory, Harvard, USA (**2019-2021**), Advised one Ph.D. student (Maike Halbhuber) at Regensburg University, Germany (**2018**), Advised three M.Sc. students (Tianqi Zhu, Maryse Ernzer, Nicola Dietler), one Ph.D. student (Fabiana Settembrini) and one postdoc (Elena Mavrona) at ETH Zurich, Switzerland (**2016-2020**).

## FELLOWSHIPS & AWARDS

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**2023** Early Career Advisory Board of APL Photonics,

**2022** 3<sup>rd</sup> place Women in ultrafast science global award from Ultrafast Science,

**2021** PRIMA Independent Grant from the Swiss National Science Foundation,

**2019** Hans Eggenberger Prize and Independent Project Grant,

**2019** SNSF Early Mobility Fellowship Grant,

**2019** Ph.D. thesis prize of the European Physical Society – QEOD (awarded every two years),

**2019** Ph.D. thesis prize from the Swiss Physical Society in the area of Metrology (awarded every year),

**2017** 1st place best student presentation award at IRMMW, Cancun, Mexico,

**2017** best student paper award at SPIE Photonics West, San Francisco, USA,

**2016** best student paper award at SPIE Photonics West, San Francisco, USA,

**2012** KSOP master scholarship,

**2011** FEMTEC career building program for female students in STEM fields,

**2010** IBM and KIT female talents,

**2009** DAAD Rise in North America

**2009** SyBBURE for summer internship at Vanderbilt, TN, USA,

**2008** Anna-Ruths undergraduate scholarship.

## **INSTITUTIONAL SERVICE**

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### **Committee Activity**

<b>2022-present</b>	Deputy Director of Quantum Science Center, EPFL, Switzerland
<b>2023-present</b>	EDMI Doctoral School Committee, EPFL, Switzerland
<b>2021-2023</b>	Social Media Officer, OSA Metamaterials Technical Group, USA
<b>2019</b>	Advocacy Committee, FAS Postdoctoral Association, Harvard, USA
<b>2016</b>	Vice President, AMP, ETHZ
<b>2015</b>	Head of Public Relations, AMP, ETHZ

### **Mentorship Activity**

<b>2022-present</b>	EPFL PhD students in Microengineering, Photonics and Electr. Engineering, Switzerland
<b>2022-present</b>	Fix the Leaky Pipeline, Switzerland
<b>2021</b>	Harvard graduate students, USA

### **Referee activity**

Reviewed articles in various journals, including from the Nature family, such as Nature Electronics, Nature Communications and Light: Science and Applications, from the American Physical Society, such as APL Photonics etc.

### **Grant proposal review**

Reviewed grant proposals for various agencies, including ANR (Agence Nationale de la Recherche, France)

### **Leadership**

Coordinated a total of 5 Swiss partners (2 start-ups and 3 research groups) within the EU-Canada-Switzerland-UK MIRAQLS project funded by Horizon Europe.

### **Conference organization**

Served on the organization committee. Activities: inviting speakers, reviewing abstracts, proposing symposia.

<b>2023</b>	Young Faculty Meeting, Platform Mathematics, Astronomy, Physics, Switzerland
<b>2022</b>	ECOC, CLEO focus session, Switzerland
<b>2022</b>	ECOC, Symposium on „Prospects on the usage of millimeterwave bands“, Switzerland

## **APPROVED RESEARCH PROJECTS**

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### **Assistant Professor at EPFL, Switzerland**

<b>2023</b>	SNSF-NSF Lead Agency grant (418 kCHF) Lithium niobate based terahertz photonics: fundamentals and applications.
<b>2022</b>	Horizon Europe Grant EU-Canada Quantum Technologies (784 kCHF) Develop quantum technologies for the mid-infrared: field detectors for 3 um radiation.
<b>2022</b>	PRIMA Grant (1.47 MCHF) Create quantum-level sensitive terahertz field detectors in integrated photonic circuits and then further deploy several of them on one single chip in order to access spatial, temporal and spectral information.

### **Postdoctoral work at Harvard, MA, USA**

<b>2019</b>	Hans Eggenberger Independent Research Grant (100 kCHF, Principal Investigator)
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Metasurfaces for high-speed control of phase, intensity, spin and optical angular momentum of light with applications in tunable mirrors at telecom frequencies, modulators and demodulators of optical angular momentum of light.

**2020**            Multidisciplinary University Research Initiative proposal (MURI)  
Fundamental studies of orbital angular momentum on light matter interactions.

**2019**            SNSF Early Mobility Fellowship Grant (72 kCHF)  
Phase-only metasurfaces for beam-steering at GHz speeds, high-speed spatial light modulators for imaging, virtual reality, cold atom trapping, pulse shaping.

## **KEY ACHIEVEMENTS**

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- *Miniaturized terahertz chips from integrated photonics: on lithium niobate and silicon-on-insulator;*
- *Fiber-based microwave/terahertz systems;*
- *Microwave speed multi-pixel spatial light modulators from flat optics and metasurfaces for free-space;*
- *Fabrication protocols of plasmonic and silicon-based metasurfaces integrated with a single layer electro-optic coatings or three-dimensional terahertz detectors;*
- *Correlation field metrology down to quantum limit of coherent and incoherent fields;*
- *Theoretical description of non-linear up-conversion on-chip.*

## Publication List

### 1. PUBLICATIONS IN PEER-REVIEWED SCIENTIFIC JOURNALS

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#### 2023

1. S. Mason and **I.-C. Benea-Chelms**, Hybrid silicon-organic Huygens metasurfaces for phase modulation, [\*Optics Express\* 31 \(22\), 36161](#) (2023)
  - Editor's pick
2. S. Rajabali and **I.-C. Benea-Chelms**, Present and future of integrated terahertz photonic devices, [\*APL Photonics\* 8 \(8\)](#) (2023);
  - Invited
3. **I.-C. Benea-Chelms**, and A. Tomasino, Resolving sub-cycle signatures: a perspective on hallmarks of terahertz field metrology, [\*Frontiers in Photonics\* 13](#) (2023);
4. A. Herter\*, A. Shams-Ansari\*, F.F. Settembrini, H. Warner, J Faist, M. Loncar, **I.-C. Benea-Chelms**, Terahertz waveform generation from integrated lithium niobate platform, [\*Nature Communications\* 14, 11](#) (2023);
  - [EPFL press release](#): Integrated photonic circuits could close the terahertz gap
5. M. Ossiander, M.L. Meretska, S. Rourke, C.M. Spaegele, X. Yin, **I.-C. Benea-Chelms** and F. Capasso, Metasurface-stabilized microcavities, [\*Nature Communications\* 14, 1114](#) (2023);
6. V. Ginis\*, **I.-C. Benea-Chelms**\*, J. Lu, M. Piccardo and F. Capasso, Resonators with tailored optical path by cascaded mode conversions, [\*Nature Communications\* 14, 495](#) (2023);

#### 2022

7. F. Bertot, A. Tomasino, **I.-C. Benea-Chelms**, Design of a low-loss silicon organic terahertz field detector, [\*IRMMW-THz\*](#) (2022);
8. **I.-C. Benea-Chelms**, S. Mason, M. Meretska, D. Elder, D. Kazakov, A. Shams-Ansari, L. Dalton and F. Capasso, Gigahertz free-space electro-optic modulators based on Mie resonances, [\*Nature Communications\* 13, 3170](#) (2022).
  - [Harvard SEAS press release](#): High-speed efficient and compact modulators for free space

#### 2021 and before

9. **I.-C. Benea-Chelmus**, M. Meretska, D. Elder, M. Tamagnone, L. Dalton and F. Capasso, Electro-optic spatial light modulator from an engineered organic layer, [\*Nature Communications\* 12 \(1\), 1-10](#) (2021);
  - [Harvard SEAS press release](#): Bridging optics and electronics
  - [Cover feature](#) in Laser Focus World: [article](#)
10. **I.-C. Benea-Chelmus\***, Y. Salamin\*, F. F. Settembrini, Y. Fedoryshyn, W. Heni, D. Elder, L. Dalton, J. Leuthold, and J. Faist, Electro-optic interface for ultrasensitive intracavity electric field measurements at microwave and terahertz frequencies, [\*Optica\* 7, 5](#) (2020);
11. Y. Salamin\*, **I.-C. Benea-Chelmus\***, Y. Fedoryshyn, W. Heni, D. Elder, L. Dalton, J. Faist, and J. Leuthold, Compact and ultra-efficient broadband plasmonic terahertz field detector, [\*Nature Communications\* 10, 5550](#) (2019);
  - [Electrical Engineering ETHZ News](#)
  - Contribution: I.C.B.C. co-designed the project and conceived the concept of time-domain metrology in nanodetectors. She built a dual-color setup and derived the theory.
12. **I.-C. Benea-Chelmus**, F. F. Settembrini, G. Scalari, and J. Faist, Electric field correlation measurements on the electromagnetic vacuum state, [\*Nature\* 568, 202-206](#) (2019);
  - [Nature News and Views](#) article
  - [Nature Podcast](#) interview with Ileana-Cristina Benea-Chelmus
  - [ETHZ news](#)
13. **I.-C. Benea-Chelmus**, T. Zhu, F. F. Settembrini, C. Bonzon, E. Mavrona, D. Elder, W. Heni, J. Leuthold, L. Dalton, and J. Faist, Three-dimensional phase modulator at telecom wavelength acting as a Terahertz detector with an electro-optic bandwidth of 1.25 Terahertz, [\*ACS Photonics\* 5 \(4\), 1398-1403](#) (2018);
14. **I.-C. Benea-Chelmus**, M. Roesch, G. Scalari, M. Beck, and J. Faist, Intensity autocorrelation measurements of frequency combs in the terahertz range, [\*Phys. Rev. A\* 96, 033821](#) (2017);
15. M. Rosch, **I.-C. Benea-Chelmus**, C. Bonzon, M. J. Suess, M. Beck, J. Faist, and G Scalari, Broadband monolithic extractor for metal-metal waveguide based terahertz quantum cascade laser frequency combs, [\*Appl. Phys. Lett.\* 111, 021106](#) (2017);
16. **I.-C. Benea-Chelmus**, C. Bonzon, C. Maissen, G. Scalari, M. Beck, and J. Faist, Subcycle measurement of intensity correlations in the terahertz frequency range, [\*Phys. Rev. A\* 93, 043812](#) (2016);
17. C. Bonzon, **I.-C. Benea-Chelmus**, K. Ohtani, M. Geiser, M. Beck, and J. Faist, Integrated patch and slot array antenna for terahertz quantum cascade lasers at 4.7 THz, [\*Appl. Phys. Lett.\* 104, 161102](#) (2014);
18. K. Ohtani, D. Turcinkova, C. Bonzon, **I. C. Benea-Chelmus**, M. Beck, J. Faist, M. Justen, U. U Graf, M. Mertens and J. Stutzki, High performance 4.7 THz GaAs quantum cascade lasers based on four quantum wells, [\*New Journal of Physics\* 18](#) (2016).

\* equal contribution

## 2. PEER REVIEWED BOOKS

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1. **I.-C. Benea-Chelmus**, Terahertz quantum optics with ultra-short pulses, [Ph.D. thesis](#) (2018);

## 3. PEER-REVIEWED CONFERENCE PROCEEDINGS

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1. A. Herter, A. Shams-Ansari, F.F. Settembrini, H. Warner, J Faist, M. Loncar, **I.-C. Benea-Chelmus**, Terahertz generation in lithium niobate platform, [CLEO US postdeadline](#), SF1B.3 (2021);
2. **I.-C. Benea-Chelmus**, Quantum-limited metrology of terahertz fields with integrated transducers, Invited Talk, Terahertz Emitters, Receivers, and Applications XII 11827, 1182702 (2021)
3. **I.-C. Benea-Chelmus**, S Mason, ML Meretska, DL Elder, LR Dalton, F. Capasso, Mie-driven free-space electro-optic transducers, Optoelectronics and Communications Conference, W2F. 1 (2021)
4. **I.-C. Benea-Chelmus** ML Meretska, DL Elder, M Tamagnone, LR Dalton, F. Capasso, Nano-engineered spatial-light modulators from electro-optic nano-molecules, CLEO: Applications and Technology, JTh3A. 24 (2021)
5. **I.-C. Benea-Chelmus**, F. F. Settembrini, Y. Salamin, Y. Fedoryshyn, W. Heni, D. Elder, L. Dalton, J. Leuthold, G. Scalari, and J. Faist, Terahertz quantum optics: from field correlation measurements on vacuum field fluctuations in free space to cavity electro-optics, Invited talk, CLEO US (2020)
6. Y. Salamin, T. Blatter, Y. Horst, Y. Fedoryshyn, W. Heni, **I.-C. Benea-Chelmus**, M. Baumann, C.Haffner, T. Watanabe, M. Burla, D. L Elder, L. R Dalton, J. Leuthold, 300 GHz Plasmonic Mixer, International Topical Meeting on Microwave Photonics (2019)
7. F. F. Settembrini, **I.-C. Benea-Chelmus**, G. Scalari, and J. Faist, Direct field correlation measurements on THz modes with sub-unity photon occupation number, CLEO Europe-EQEC (2019);
8. **I.-C. Benea-Chelmus**, T. Zhu, F. F. Settembrini, C. Bonzon, E. Mavrona, D. Elder, W. Heni, J. Leuthold, L. Dalton, and J. Faist, Organics-based phase modulator for Terahertz detection up to 1.25 THz, 43rd International Conference on Infrared, Millimeter, and Terahertz Waves (2018);
9. **I.-C. Benea-Chelmus**, C. Maissen and J. Faist, Quantum theory of fast electro-optic correlations, 42nd International Conference on Infrared, Millimeter, and Terahertz Waves (2017);
10. **I.-C. Benea-Chelmus**, M. Roesch, G. Scalari, M. Beck, and J. Faist, Amplitude modulation in terahertz frequency combs, 42nd International Conference on Infrared, Millimeter, and Terahertz Waves (2017);
11. **I.-C. Benea-Chelmus**, C. Bonzon and J. Faist, High-sensitivity intensity correlation measurements for photon statistics at terahertz frequencies, Terahertz, RF, Millimeter, and Submillimeter-Wave Technology and Applications X (2017);

#### **4. PATENTS AND LICENCES**

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1. A provisional patent application with U.S. Serial No.: 63/148,595 about hybrid organic-nanostructured spatial light modulators has been filed by the President and Fellows of Harvard College at the office for patents at Harvard.
2. A patent application with U.S. Serial No.: 63/310,992 about cascaded mode resonators by the President and Fellows of Harvard College at the office for patents at Harvard.

#### **5. INVITED AND CONTRIBUTED PRESENTATIONS**

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## Invited Talks at National and International Conferences:

### 2023

1. I.-C. Benea-Chelmus, Organic molecules for nanophotonics, Petals winter school, Italy;
2. I.-C. Benea-Chelmus, On-chip detection of sub-cycle fields by nonlinear mixing, Fluctuations and Nonlinearities, Germany;
3. I.-C. Benea-Chelmus, Photonic circuits for quantum sensing in the terahertz, Swiss Nano Convention, Switzerland;
4. I.-C. Benea-Chelmus, Miniaturised terahertz chips, CLEO Europe, Germany;
5. I.-C. Benea-Chelmus, On-chip generation and detection of terahertz waves, Optica Topical Meeting on Nonlinear Optics, USA;
6. I.-C. Benea-Chelmus, Hybrid platforms for free-space active photonics, Optica Imaging Congress, August 14-17, USA;
7. I.-C. Benea-Chelmus, Nonlinear nanophotonics on hybrid silicon-organic platform, EOSAM, September 11-15, France;

### 2022

8. I.C. Benea-Chelmus, Integrated terahertz photonics, CNRS Optical systems and quantum devices for mid-infrared and terahertz technologies (2022), France;
9. I.C. Benea-Chelmus, Integrated terahertz photonic devices, Optica - Optical Sensors and Sensing Congress (2022), Canada;
10. I.C. Benea-Chelmus, Gigahertz active photonics enabled by electro-optic metasurface modulators, Plasmonica (2022), Italy;
11. I.C. Benea-Chelmus, Free-space electro-optic modulators, META (2022), Spain;
12. I.C. Benea-Chelmus, On-chip nonlinear terahertz emission and detection, IQCLSW (2022), Switzerland (*keynote talk*);
13. I.C. Benea-Chelmus, Integrated photonics for the terahertz, IRMMW-THz (2022), Netherlands (*keynote talk*);
14. I.C. Benea-Chelmus, Ultra-thin gigahertz-speed free-space electro-optic modulators, MWP (2022), USA;

### 2021

15. I.-C. Benea-Chelmus, Electro-optic transducers for free-space and on-chip applications, EPFL Photonics Day (2021), Switzerland;
16. I.-C. Benea-Chelmus, Integrated Terahertz Photonics, ISOT (2021), France;
17. I.-C. Benea-Chelmus, Mie-driven free-space electro-optic transducers, OMN summer school (2021), USA;
18. I.-C. Benea-Chelmus, Quantum-limited metrology of terahertz fields with integrated transducers, SPIE Optics+Photonics (2021), USA;
19. I.-C. Benea-Chelmus, Nano-engineered electro-optic transducers for high-speed active photonics, OECC conference (2021), China;

### 2020



20. I.-C. Benea-Chelmsus, Y. Salamin, F. F. Settembrini, G. Scalari, Y. Fedoryshyn, W. Heni, D. Elder, L. Dalton, J. Leuthold, and J. Faist, Terahertz quantum optics in the time-domain: from field correlation measurements on vacuum field fluctuations in free space towards cavity electro-optics, *CLEO US* (2020);

### **Before 2019**

21. I.-C. Benea-Chelmsus, F. F. Settembrini, G. Scalari, and J. Faist, Electric field correlation measurements on the electromagnetic vacuum state, presented at *ITQW* (2019);
22. *SPS* conference (2019);
23. *CLEO-EQEC Europe* (2019);
24. *Arosa QSIT General Meeting* (2019);
25. *SFB Workshop Emergent relativistic phenomena in condensed matter* 2018;
26. I.-C. Benea-Chelmsus, F. F. Settembrini, G. Scalari, and J. Faist, Few photon correlations using electro-optic correlations, *OSA Advanced Photonics Congress* (2018);
27. I.-C. Benea-Chelmsus, C. Maissen, and J. Faist, Quantum theory of fast electro-optic correlations, *42nd International Conference on Infrared, Millimeter, and Terahertz Waves* (2017);
28. I.-C. Benea-Chelmsus, M. Roesch, G. Scalari, M. Beck, and J. Faist, Electric field and intensity correlation measurements of a Terahertz comb using electro-optic sampling, *Terahertz Science, Nanotechnologies and Applications* (2016).

### **Invited Seminars, Symposia and Workshops**

#### **2023**

29. I.-C. Benea-Chelmsus, Beyond a single cycle of light: photonics for microwaves and terahertz waves, CSEM, February 8, Switzerland;
30. I.-C. Benea-Chelmsus, Electro-optic microwave-to-optical conversion, KIT Hyperion seminar, March 16, Germany (remote);
31. I.-C. Benea-Chelmsus, Nonlinear integrated photonics for microwave and terahertz applications, ICFO, April 28, Spain;
32. I.-C. Benea-Chelmsus, Nonlinear integrated photonics for microwave and terahertz applications, Uni Paderborn, September 11, Germany;

#### **2022**

33. I.-C. Benea-Chelmsus, Beyond a single cycle of light: photonics for microwaves and terahertz waves, Uni Basel, December 6, Switzerland;
34. I.C. Benea-Chelmsus, Terahertz photonics, MAP Young Faculty Meeting (2022), Switzerland;
35. I.C. Benea-Chelmsus, Free-space modulators, Adolphe Merkel Institute (2022), Switzerland;
36. I.C. Benea-Chelmsus, Electro-optic metasurfaces, Workshop on Structured light and its applications (2022), Germany;

#### **2021**

37. I.-C. Benea-Chelmsus, Metrology and transduction of terahertz signals in integrated photonics, *IST Austria* (2021);

38. I.-C. Benea-Chelmsus, Sub-cycle terahertz quantum metrology, *Max Planck Institute for the Structure and Dynamics of Matter, Germany (2021)*;

## 2020

39. I.-C. Benea-Chelmsus, Sub-cycle metrology of terahertz signals at the quantum limit, *Quantum Engineering Symposium (2020)*;  
40. I.-C. Benea-Chelmsus, Terahertz quantum optics: from vacuum field fluctuations in free space to chip-based sensing of cavity confined fields, *Quantum/Photonics seminar Macquarie University (2020)*;

## Before 2019

41. I.-C. Benea-Chelmsus, Field correlation measurements on the electromagnetic vacuum state, *Seminar University of Regensburg (2018)*;  
42. I.-C. Benea-Chelmsus, Measuring photon statistics with femtosecond pulses, *Seminar Harvard (2017)*;

## Contributed Conference Talks and Poster Presentations

>20 contributed talks and 6 posters at national and international conferences.

## 6. COMMITTEE WORK and OUTREACH

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### Presence on PhD thesis defense committees

- 2022 Mohammad Samizadeg Nikooytablvandani, EPFL, Switzerland  
2023 Nicolas Tappy, EPFL, Switzerland  
2023 Mohammad Hamdi, EPFL, Switzerland  
2023 Thomas Bonazzi, Paris Cite and Ecole Normale Superieure Paris, France

### Student mentorship

- 2022 ECOC student chapter discussion round on job perspectives in academia

## 7. STUDENTS and POSTDOCS accomplishments

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- 2023 PhD student Francesco Bertot wins 3<sup>rd</sup> place poster prize at Swiss Nanoconvention  
2023 Undergraduate Sydney Mason wins E3 internship sponsored by Dean office  
2023 Postdoc Alessandro Tomasino gets Keynote talk at IRMMW-THz conference for work done at HYLAB

## 8. IN THE NEWS

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### Assistant professor at EPFL

- 2023 Press release on [lithium niobate emitters](#)  
2022 Press release of Zurich Instruments on our work on Gigahertz modulators  
2022 Profile by the [Quantum Science Center](#) at EPFL  
2022 Coverage by [Swissinfo.com](#) on how Switzerland is trying to bridge the science gender gap

## **Affiliate at Harvard**

2022 Press release at Harvard on [Gigahertz Mietronics](#)

2021 Our work on Single layer electro-optic modulator is in the [Top25 most read articles in Nature Comm.](#)

2021 [Press release](#) at Harvard on Single layer electro-optic modulator

2021 [Press release](#) in Laserfocus

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