

# CURRICULUM VITAE

## Christina Zacharaki, physicist

### PERSONAL AND CONTACT DETAILS

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**Date of birth:** 01/07/1989  
**Place of birth:** Trikala  
**Citizenship:** Hellenic  
**Address:** Iokastis 20, 15772, Zografou, Greece  
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### EDUCATION

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- 2018 – today: **PhD student in Physical Sciences** with specialization in **Materials Physics** with subject "Preparation and study of  $Zr_xHf_{1-x}O_2$  thin films with ferroelectric properties" at Department of Physics of National and Kapodistrian University of Athens in collaboration with National Centre for Scientific Research "Demokritos"
- 2014 – 2017: **Master Degree in Condensed Matter Physics and Material Science** at Department of Physics of National and Kapodistrian University of Athens  
Degree: **8.45/10**  
*MSc thesis:* "Theoretical study of electronic structure of planar organic molecules (purines, pyrimidines and similar molecules) with linear combination of orbitals"
- 2007 – 2014: **Bachelor degree in Physics** at Department of Physics of National and Kapodistrian University of Athens  
Section of **Condensed Matter Physics**  
Degree: **7.12/10**  
*BSc thesis:* "Magnetic behavior of Boron-doped carbon nanotubes"

### PROFESSIONAL EXPERIENCE

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- April 2018 - today: **Research fellow at Epitaxy and Surface Science Laboratory (ESSL)** of Institute of Nanoscience and Nanotechnology at NCSR "Demokritos":
  - Growth of ferroelectric  $HfZrO_2$  thin films by molecular beam deposition
  - Structural study by X-Ray Diffraction analysis (XRD) and X-Ray Photoelectron Spectroscopy (XPS)
  - Electrical characterization of ferroelectric devices (capacitors, field-effect transistors) in the framework of European projects H2020-"3εFERRO" and "BeFerroSynaptic"
- October 2017 - June 2018: Physics and Chemistry teaching to high school students

### FOREIGN LANGUAGES

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- English (CEFR level C2)  
Diploma: *Certificate of Proficiency in English (Michigan University)*
- French (CEFR level C2)  
Diploma: *Diplôme de langue et littérature françaises 2<sup>ème</sup> degré (Université Paris Sorbonne)*

## PROGRAMMING / USE OF P/C

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- Certificate of basic knowledge on Informatics, use of PC and file management, word processing, spreadsheets, presentations and information/communications
- Basic knowledge of **C++**, **Fortran**

## PUBLICATIONS IN PEER REVIEWED JOURNALS

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- **Epitaxial HfTe 2 Dirac semimetal in the 2D limit**  
Polychronis Tsipas, Panagiotis Pappas, Evgenia Symeonidou, Sotirios Fragkos, Christina Zacharaki, Evangelia Xenogiannopoulou, Nikitas Siannas, and Athanasios Dimoulas, *APL Materials* **9**, 101103 (2021).
- **The Role of Interface Defect States in N and P-Type Ge Metal-Ferroelectric-Semiconductor Structures with Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>2</sub> Ferroelectric**  
Georgia Andra Boni, Cosmin M. Istrate, Christina Zacharaki, Polychronis Tsipas, Stefanos Chaitoglou, Evangelos K. Evangelou, Athanasios Dimoulas, Ioana Pintilie, and Lucian Pintilie, *Phys. Status Solidi A* **218**, 2000500 (2021).
- **Reliability aspects of ferroelectric TiN/Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>2</sub>/Ge capacitors grown by plasma assisted atomic oxygen deposition (part of special issue)**  
C. Zacharaki, P. Tsipas, S. Chaitoglou, L. Bégon-Lours, M. Halter, and A. Dimoulas, *Appl. Phys. Lett.* **117**, 212905 (2020).
- **Depletion induced depolarization field in Hf<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub> metal-ferroelectric-semiconductor capacitors on germanium**  
C. Zacharaki, P. Tsipas, S. Chaitoglou, E. K. Evangelou, C. M. Istrate, L. Pintilie, and A. Dimoulas, *Appl. Phys. Lett.* **116**, 182904 (2020).
- **Very large remanent polarization in ferroelectric Hf<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub> grown on Ge substrates by plasma assisted atomic oxygen deposition**  
C. Zacharaki, P. Tsipas, S. Chaitoglou, S. Fragkos, M. Axiotis, A. Lagoyiannis, R. Negrea, L. Pintilie, and A. Dimoulas, *Appl. Phys. Lett.* **114**, 112901 (2019).

## PARTICIPATION IN INTERNATIONAL SCIENTIFIC CONFERENCES

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- **XXXV Panhellenic Conference on Solid State Physics and Materials Science, 26-29 September 2021, Athens, Greece (virtual).**  
Oral presentation: "Hf<sub>x-1</sub>Zr<sub>x</sub>O<sub>2</sub>-based ferroelectric memories"  
C. Zacharaki, N. Siannas, P. Tsipas, S. Chaitoglou, and A. Dimoulas
- **E-MRS Fall meeting, 20-23 September 2021 (virtual)**  
Oral presentation: "Scaling of HZO ferroelectric in Ge MFS for low power FTJ non-volatile memory"  
N. Siannas, P. Tsipas, C. Zacharaki, S. Chaitoglou, C. Istrate, L. Pintilie, and A. Dimoulas
- **ESSDERC 2021 - IEEE 51st European Solid-State Device Research Conference (ESSDERC), 13-22 September 2021, Grenoble, France (Virtual)**  
Oral presentation and conference paper: "Scaling ferroelectric HZO thickness for low power Ge MFS-FTJ memories"  
N. Siannas, C. Zacharaki, P. Tsipas, S. Chaitoglou, L. Begon-Lours and A. Dimoulas

- **6<sup>th</sup> edition of the International Workshop of Materials Physics, 14-16 September 2021, Magurele, Romania (Virtual)**  
Oral presentation: “Scaling of HZO ferroelectric in Ge MFS for low power FTJ”  
 N. Siannas, P. Tsipas, C. Zacharaki, S. Chaitoglou, and A. Dimoulas
- **XXXIV Panhellenic Conference on Solid State Physics and Materials Science, 11-14 September 2019 in Patras, Greece.**  
Oral presentation: “Very large remanent polarization in TiN/Hf<sub>x-1</sub>Zr<sub>x</sub>O<sub>2</sub>/Ge metal-ferroelectric-semiconductor capacitors by plasma assisted molecular beam deposition”  
C. Zacharaki, P. Tsipas, S. Chaitoglou, S. Fragkos, M. Axiotis, A. Lagoyiannis, R. Negrea, L. Pintilie, and A. Dimoulas
- **ISAF-ICE-EMF-IWPM-PFM conference – 2019 f2cπ2, 14-19 July 2019, in Lausanne, Switzerland.**  
Invited talk: “Large remanent polarization in TiN/Zr<sub>x</sub>Hf<sub>1-x</sub>O<sub>2</sub>/Ge metal-ferroelectric-semiconductor capacitors”  
C. Zacharaki, P. Tsipas, S. Chaitoglou, S. Fragkos, M. Axiotis, A. Lagoyiannis, R. Negrea, L. Pintilie, and A. Dimoulas
- **INFOS 2019 in Cambridge, UK, on 30th June - 3rd July 2019**  
Oral presentation: “TiN/Zr<sub>x</sub>Hf<sub>1-x</sub>O<sub>2</sub>/Ge metal-ferroelectric-semiconductor capacitors by plasma assisted molecular beam deposition”  
 C. Zacharaki, P. Tsipas, S. Chaitoglou, S. Fragkos, L. Pintilie, R. Negrea, A. Dimoulas
- **Spring Meeting 2019 IUMRS-ICAM International Conference on advanced Materials, May 27-31 2019 in Nice, France.**  
Oral presentation: “Very large remanent polarization in TiN/Zr<sub>x</sub>Hf<sub>1-x</sub>O<sub>2</sub>/Ge metal-ferroelectric-semiconductor capacitors”  
C. Zacharaki, P. Tsipas, S. Chaitoglou, S. Fragkos, M. Axiotis, A. Lagoyiannis, R. Negrea, L. Pintilie, and A. Dimoulas
- **XXXII Panhellenic Conference on Solid State Physics and Materials Science, September 18-21 2016 in Ioannina, Greece.**  
Poster presentation: “Electronic structure of purines, pyrimidines and similar molecules with LCAO”  
C. Zacharaki, M. Mantela, A. Morphis, M. Tassi, and C. Simserides

## OTHER PRESENTATIONS

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- 15 June 2021: «Study of reliability of ferroelectric devices Ge/Hf<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub>/TiN» in PhD-candidates virtual seminars, Section of Condensed Matter Physics, Department of Physics, NKUA
- 29 May 2020: «Growth of ferroelectric HZO and study of the physical and electrical properties» in virtual seminars of European project H2020-«3eFERRO»
- 19 February 2020: «Study of Ge-MFS capacitors based on ferroelectric Hf<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub>» in PhD-candidates seminars, Section of Condensed Matter Physics, Department of Physics, NKUA
- 8 February 2019: «Preparation and study of ferroelectric Hf<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub> on Ge substrates by molecular beam deposition» in PhD-candidates seminars, Section of Condensed Matter Physics, Department of Physics, NKUA

## OTHER ACTIVITIES

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- 29 January-19 February 2021: Attendance at Virtual Project Meeting-PhD training of European project H2020-«BeFerroSynaptic»
- 15 March 2021: Attendance at NEUROTECH FORUM II «Neuromorphic Computing Technologies: Opportunities, challenges and Applications Roadmap»
- 29 September 2017: Participation as researcher in Researchers' Night 2017 at National Technical University of Athens
- 29 March-2 April 2017: Participation as volunteer in «Athens Science Festival 2017» at Technopolis City of Athens
- 30 September 2016: Participation as researcher in Researchers' Night 2016 at National Technical University of Athens