

CURRICULUM VITAE

PERSONAL INFORMATION

LAST NAME: CHATZARAKIS

NAME: NIKOLAOS

DATE OF BIRTH: 18.05.1992

RESIDENCE ADDRESS: NIKOLAOU GIZI 1, PLATEIA SINANI, HERAKLION, 71306

INSTITUTIONAL ADDRESS: UNIVERSITY OF CRETE, DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY

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TITAOI ΣΠΟΥΔΩΝ

09.2023: PhD at Department of Materials Science and Engineering of University of Crete **with title: Advanced Single Photon Sources based on innovative semiconductor nanostructures**

09.2015 – 11.2017: Master of Science degree in «Photonics and Nanoelectronics» from the Department of Physics of the University of Crete, GPA: 7.04/10

09.2011 – 07.2015: Bachelor Degree in Physics from the Department of Physics of the University of Crete, GPA: 7.18/10

September 2011: Start studying Physics at University of Crete.

September 2010: Start studying informatics at university of Piraeus after the Greek entrance examination.

July 2010: Graduation from 2nd general senior high school of Pefki, Athens

RESEARCH EXPERIENCE

09.2023 – today: Foundation for Research and Technology at the Microelectronics Research Group

Research Title

Optical characterization of dielectric thin films for RF MMICs

Supervisor: Dr. Konstantinidis George

06.2018 – 09.2023: Department of Materials Science and Engineering of University of Crete with collaboration of Foundation for Research and Technology at the Microelectronics Research Group

Research Title

Advanced Single Photon Sources based on innovative semiconductor nanostructures

Supervisor: Prof. Pelekanos Nikolaos

09.2011 – 07.2015: University of Crete, Department of Physics in collaboration with Foundation for Research and Technology (FORTH) and Microelectronics research group (MRG).

Research Title

Study and fabrication optimization of photodetectors based on Transition Metal Dichalcogenides.

Supervisor: George Deligeorgis

TECHNICAL EXPERIENCE & SKILLS

-Χαρακτηρισμός

- Raman Spectroscopy
- Photoluminescence Spectroscopy
- Micro-Photoluminescence Spectroscopy
- Electrical characterization of thin film devices
- Photon lifetime measurements
- Correlation and cross-correlation photon measurements

-Κατασκευή

- Chemical Vapor Deposition (CVD) technique for 2D film fabrication
- Electron Beam Physical Vapor Deposition on thin film semiconductors
- Vacuum annealing

-Άλλα

- Laser systems: He:Cd (UV) , Femtosecond Ti:Sapphire , 532nm diode pumped laser
- Turbo pumps
- CCD camera operation (liquid N₂ cooled)
- Cryogenics (10K Helium and 70K Nitrogen cryostats)
- Optical alignment

TEACHING EXPERIENCE

01/2014-05/2015: Assistant in the undergraduate lab course «Mechanics and Thermodynamics laboratory» (as a BSc student). Responsible for the experiments:

- Free Fall
- Liquid Viscosity

10.2015 – 05.2016: Assistant in the undergraduate lab course «Advanced Physics laboratory» (as MSc student). Responsible for the experiments:

- Zeeman Effect
- Photoelectric effect

01/2019- 06/2019: Teaching assistant at the course General Mathematics II (as a PhD student)

01/2022-06/2022: Teaching assistant at the course General Mathematics II (as a PhD student)

COMPUTER KNOWLEDGE

Operating Systems: Windows, Linux, MacOS

Programing: MATLAB, FORTRAN, ORIGIN, LabVIEW,

Text processing software: Microsoft Office, Open office, Libre office, LaTeX

LANGUAGES

Greek: Native Language

English: MICHIGAN STATE UNIVERSITY PROFICIENCY

French: DELF B1 (IFA)

Conferences

MAPbI₃ on GaAs: a heterointerface with giant passivation effect

E. Manidakis, N. G. Chatzarakis, K. Tsagaraki, D. Tsikritzis, C. Stoumpos, N. T. Pelekanos

Wocsdice-Exmatec 2024, Heraklion, May 2024 (oral)

Dual-wavelength lasing in a MAPbCl₃ vertical-cavity surface-emitting laser

C. Siaitanidou, V. Spanou, N. G. Chatzarakis, K. Tsagaraki, E. Delamadeleine, C. Stoumpos, N. T. Pelekanos

Wocsdice-Exmatec 2024, Heraklion, May 2024 (oral)

Exciton recombination dynamics in MAPbCl₃ single crystals

S. N. Pikou, V. Spanou, N. G. Chatzarakis, M. Androulidaki, C. Stoumpos, N. T. Pelekanos

Wocsdice-Exmatec 2024, Heraklion, May 2024 (oral)

Enhanced radiative rates in GaAs-based nanowires next to a gold surface due to plasmonic effect

N. G. Chatzarakis, T. Tauchnitz, G. Deligeorgis, E. Dimakis, N. T. Pelekanos

Wocsdice-Exmatec 2024, Heraklion, May 2024 (oral)

Advanced Semiconductor Single Photon Sources (Invited talker)

FORTH Science days 2023, Heraklion, December 2023

Reduced Stark effect in CsPbBr₃ Perovskite Nanocrystals

N. G. Chatzarakis, A. Kostopoulos, G. Konstantinidis, G. Deligeorgis, G. Raino, M. Bodnarchuk, M. V. Kovalenko, N. T. Pelekanos

36th Panhellenic Conference on Solid-State Physics and Materials Science, Heraklion, September 2022.

Strong passivation effect at the MAPbI₃/GaAs hetero-interface,

E. G. Manidakis, N. G. Chatzarakis, K. Tsagaraki, D. Tsikritzis, C. C. Stoumpos, N. T. Pelekanos,
36th Panhellenic Conference on Solid-State Physics and Materials Science, Heraklion, September 2022.

Strong coupling phenomena in a CsPbBr₃ nanocrystal microcavity at 90K,

C. Siaitanidou, N. G. Chatzarakis, G. Kourmoulakis, G. Stavrinidis, G. Konstantinidis, G. Raino, M. Bodnarchuk, M. V. Kovalenko, N. T. Pelekanos,
36th Panhellenic Conference on Solid-State Physics and Materials Science, Heraklion, September 2022.

MAPbI₃ on GaAs: a hetero-interface with strong passivation effect,

E. G. Manidakis, N. G. Chatzarakis, K. Tsagaraki, C. C. Stoumpos, N. T. Pelekanos,
35th Panhellenic Conference on Solid-State Physics and Materials Science, Athens, September 2021. (oral)

Single-photon source at non-cryogenic temperature based on InAs quantum dots,

N. G. Chatzarakis, E. A. Amargianitakis, N. T. Pelekanos, 44th Workshop on Compound Semiconductor Devices and Integrated Circuits held in Europe, WOCSDICE 2021, June 2021. (oral)

Single Photon emission at 220K from an InAs-based Quantum Dot,

N. G. Chatzarakis, G. Thyris, A. Stavrinidis, G. Konstantinidis, Z. Hatzopoulos, N. T. Pelekanos,
International Conference on Quantum dots (QD-2020), Munich, December 2020.

Dot-like emission from highly-strained GaAs/AlGaAs dots-in-wire,

N. G. Chatzarakis, T. Tauchnitz, R. Hübner, E. Dimakis, N. T. Pelekanos,
International Conference on Quantum dots (QD-2020), Munich, December 2020.

Complex quantum dots in III-As nanowires,

T. Tauchnitz, L. Balaghi, R. Hübner, N. G. Chatzarakis, N. T. Pelekanos, G. Bussone, R. Grifone, J. Grenzer, H. Schneider, M. Helm, E. Dimakis,
Nanowire Week workshop, Pisa, September 2019.

Publications

Red-shifted biexciton and trion lines in strongly- confined (211)B InAs/GaAs piezoelectric quantum dots

N. G. Chatzarakis, E. A. Amargianitakis, S. Germanis, A. Stavrinidis, G. Konstantinidis, Z. Hatzopoulos, N. T. Pelekanos, Journal of Applied Physics
<https://doi.org/10.1063/5.0084931>

Near room-temperature single photon emission from a strongly-confined piezoelectric InAs quantum dot

N. G. Chatzarakis, S. Germanis, I. Thyris, C. Katsidis, A. Stavrinidis, G. Konstantinidis, Z. Hatzopoulos, N. T. Pelekanos, Physical Review Applied

<https://doi.org/10.1103/PhysRevApplied.20.034011>

MAPbI₃ on GaAs: A Washable Heterointerface with Robust Passivation Effect

E. G. Manidakis, D. Tsikritzis, N. G. Chatzarakis, M. Androulidaki, K. Tsagaraki, E. Pavlopoulou, C. C. Stoumpos, and N. T. Pelekanos J. Phys. Chem.

<https://doi.org/10.1021/acs.jpcc.3c05799>