

Curriculum Vitae

PERSONAL INFORMATION

Dr. Christos Bolakis

📍 Nea smymi, Athens 17121, Greece

☎ +306972264267

✉ c.bolakis@kemea-research.gr

🌐 LinkedIn: <https://www.linkedin.com/feed/>

Sex Male | Nationality Greek

PERSONAL STATEMENT

I hold an MSc in Physics (Sensors' Concentration) from the Naval Postgraduate School (NPS) in California, USA, and a Ph.D. in Electrical Engineering from the National Technical University of Athens, Greece. After serving for 17 years as a Naval Officer and 3 years as a Naval Faculty member, I decided to pursue my passion for a career in the Academic/Research field. Currently, I am a Lecturer at the Hellenic Naval Academy, teaching courses related to Electro-optical Systems and Radars, and an Academic Associate at the University of West Athens on a post-graduate level, teaching courses related to UAVs Antenna patterns. My recent activity as a researcher is focused on the sensors' research and development, specifically the IR region through the investigation of optimization methods applied to IR Innovative Systems. I am the author of the book "Electro-optical Systems. An introduction", used for teaching purposes at the Hellenic Naval Academy. Lastly, I am a senior researcher at the center for security studies and I work for the European Commission as an expert at the EU observatory of critical technologies and an evaluator of EDF proposals.

WORK EXPERIENCE AND ACADEMICS

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| January 2023 - Present | European Commission / Proposals' evaluator of European Defence Funds (EDF)
Evaluating proposals related to surface and airborne Electronic systems (Autonomous and semi-autonomous) |
| October 2022 - Present | European Commission / Expert at the Observatory of Critical Technologies (OCT)
Responsible for the sensors' technological observation and analysis for targeted needs of the European Commission. |
| September 2012 - Present | Lecturer at the Hellenic Naval Academy <ul style="list-style-type: none">▪ Teaching the physics aspect and analysis of Electro - Optical systems and RADARS to the 3rd year naval cadets (January 2018 - Present)▪ Teaching antennas theory and laboratory to the 4th year naval cadets (basic teaching material: EM waves, SWR in waveguides, antenna radiation patterns and phased array analysis) (2013-Present)▪ Teaching Combat systems operation to the 4th year naval cadets (2012-2013)▪ Experience as thesis advisor on subjects of a) Electronic analysis of a prototype Radar (2019) and b) Terahertz applications in the national security and military sector (2022). |
| February 2020 - Present | Academic Associate at the University of West Athens <ul style="list-style-type: none">▪ Conducting research into optimization methods of microbolometric electrical equipment. (February 2020 – June 2021)▪ Teaching telecommunication's module through the MSc program " Unmanned Autonomous and Remote-Controlled Systems" (September 2021 – Present) |
| September 2018 - Present | Senior researcher at the Centre for Security Studies (Ministry of Citizen Protection)
Management in projects of the European Union related to innovative sensor systems for Border Security. (The systems involve Radars and E/O systems mounted on ground, aerial and space platforms) |
| October 2019 – Present | Instructor in Electronics at the Metropolitan College of Athens (Supervised by the University of Solent, Southampton, UK) |
| September 2019 – October 2022 | Research Associate at the Manhattan College, USA
Conducting research in Cognitive Radars in collaboration with the Department of Electrical Engineering of the Manhattan College. |

- March 2017 – May 2020 **Academic Faculty Member and study Officer at the Graduate Center of the Hellenic Navy**
- Teaching the physics and electronics aspect of Electrooptical and radar systems to naval officers
 - Conducting studies to update/upgrade Curricula relating to the above topics
- June 2015 – March 2017 **Naval Officer - Executive Officer in a Warship (Chief of Staff)**
- June 2003 – June 2015 **Naval Officer - Combat Systems and Electronics Officer**
 From 2003 to 2008, I worked as Combat and electronic systems assistant officer in a warship. From 2010 to 2015, I worked as the Combat and electronic systems officer of the warship.

EDUCATION AND TRAINING

- December 2011 – December 2017 **PhD in Electrical Engineering**
 National Technical University of Athens. School of electrical and computer engineering
- Dissertation title: Optimized coupling configurations in the terahertz spectrum
 - Dissertation's outcome: The design of an optimized absorbing element of THz and IR radiation
- July 2008 – July 2010 **MSc in Applied Physics**
 Naval Postgraduate School (NPS), Monterey, California
 Combat systems science and engineering (CSEE). Department of applied physics.
- GPA: 3.83 / 4.00
 - Thesis title: High Terahertz Absorbing Nanoscale Metal Films for Fabrication of Bi - Material THz Sensors
 - Significant experience gained from the extended experimental work during my thesis research (i.e., use of Fourier Transform Interferometer (FTIR) and THz spectroscopy)
- September 1999 – June 2003 **Graduation from the Hellenic Naval Academy**
 Upon my graduation I became combat officer of the Hellenic Navy

PERSONAL SKILLS

- Mother tongue: Greek
- Other languages: English - Certificate of Michigan Proficiency in English (ECPE)
- Communication / teaching skills
- Good communication skills gained through my studies / research at the NPS, the coordination of European Programs at the Hellenic Center for Security Studies and the teaching activity at an English-language College.
 - Good presentation skills gained through numerous project meetings and reviews, conferences, colloquia, and teaching activity
 - Graduated from school of academic trainers training (Jun - Jul 2017)
 - Reviewer at the "Journal of Electromagnetic Waves and Applications" and the Journal in naval science and technology "Nausivios Chora" (Feb 2019 - present)
- Organisational / managerial skills
- Evaluator and expert for organizations directly connected to the European Commission
 - Work Package Leader and Project Security Officer to EU Projects (HORIZON 2020)
 - Chief of staff at a warship (Jun 2015– Mar 2017)
 - Leading a team of 20 technicians of electronic and combat systems (2010-2015)
 - Graduated from the Naval academy of commanding officers (Sep 17 – Feb 18)
- Computer skills
- Good command of developing codes in MATLAB and COMSOL multi physics finite element environment

PUBLICATIONS AND DISTICTIONS

Publications A (Books and Monographs)

- Christos Bolakis and Ioannis Koukos, "Electro – *Optical Systems. An Introduction*," Textbook for the Hellenic Naval Academy, Piraeus, Greece (2018)
- Christos Bolakis, "Designing an adjustable THz absorber," *Journal of Electromagnetic Waves and Applications*, Vol. 33 (9), pp. 1121 (2019) <https://www.tandfonline.com/doi/full/10.1080/09205071.2019.1598897>

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Publications B (Peer Reviewed Journals)

- C. Bolakis, C. N. Vazouras, G. Giakos et al., "Design of a dual-thermal window micro-bolometric pixel element," Microwave and Optical Technology Letters, Wiley online Library, Volume 63, Issue 6 (2021) <https://doi.org/10.1002/mop.32786>
- C. Bolakis, et al., "FOLDOUT: A Through Foliage Surveillance System for Border Security," Technology Development for Security Practitioners. Security Informatics and Law Enforcement, Springer (2021) https://link.springer.com/chapter/10.1007/978-3-030-69460-9_16#citeas
- C. Bolakis, IS Karanasiou, et al., "Optimizing the Absorption Capability of a Microbolometer Pixel's Active Element," International Journal of Electromagnetics and Applications, Vol. 9 (1), pp. 1 (2019) <http://article.sapub.org/10.5923.j.ijea.20190901.01.html>
- C. Bolakis, IS Karanasiou, D. Grbovic, G. Karunasiri and N. Uzunoglu, "Optimizing detection methods for terahertz bio-imaging applications," Optical Engineering, Vol. 54 (6), pp. 067107 (2015) <http://opticalengineering.spiedigitallibrary.org/article.aspx?articleid=2350298%20&journalid=92>
- C. Bolakis, D. Grbovic and G. Karunasiri, "Design and characterization of terahertz-absorbing Nano-laminates of dielectric and metal thin films," Optics Express, Vol. 18 (14), pp. 14488 (2010) <https://www.osapublishing.org/oe/abstract.cfm?uri=oe-18-14-14488&origin=search>
- Z. Paladin, N. Kapidani, C. Bolakis, et. Al., "Maritime information sharing environment deployment using the advanced multi-layered Data Lake capabilities: EFFECTOR project case study," Scientific Journal of Maritime Research, 36 (2), 291-304 (2022) <https://doi.org/10.31217/p.36.2.13>
- G. J. Tsekouras, C. Bolakis, et al., "An Optimal Design of a Small Photovoltaic Plant with Cost Minimization based on a Real Database of PV Panels and Inverters," WSEAS Transactions on circuits and systems, Vol. 20 (2021) <https://wseas.com/journals/cas/2021.php>
- M. Nowak, C. Bolakis, G. Giakos, et al., "A Cognitive Radar for Classification of Resident Space Objects (RSO) operating on Polarimetric Retina Vision Sensors and Deep Learning," IEEEExplore, Instrumentation and Measurement Society (2020) <https://ieeexplore.ieee.org/document/9010272>
- C. N. Vazouras, C. Bolakis, et al., "A Case Study on the Feasibility of RCS Measurements in a Non-Anechoic Environment Using Legacy or Inexpensive Commercial Off-The-Shelf Equipment," Nausivios Chora, Journal in naval sciences and technology, Vol. 7, ISSN: 1791-4469 (2018) <http://nausivios.hna.gr/docs/2018B2.pdf>

EU Projects and selected Conferences

- September 2022 – Present: EU Project 'FLEXI – Cross' - Flexible and Improved Border-Crossing Experience for Passengers and Authorities (Work Package Leader and Task Leader) <https://flexicross-project.eu/>
- October 2021 – Present: EU Project 'PROMENADE - imPROVed Maritime awareNEss by means of AI and BD mEthods, Horizon 2020 (Work Package Leader and Task Leader) <https://www.promenade-project.eu/>
- January 2021 – November 2022: EU Project "EFFECTOR" - An End-to-end Interoperability Framework For MaritimE Situational Awareness at StrategiC and TacTical OpeRations, Horizon 2020 (Work Package Leader and Project Security Officer) <https://www.effector-project.eu/>
- April 2020 – January 2023: EU Project "BorderUAS" - Semi-autonomous border surveillance platform combining next generation unmanned aerial vehicles with ultra-high-resolution, Horizon 2020 (Project Security Officer) <https://borderuas.eu/>
- September 2018 – September 2022: EU Project "FOLDOUT" - A through foliage surveillance system for border security, Horizon 2020 (Task Leader) <https://foldout.eu/>
- 2018: Conference on defense and security state of the art technology in Athens (Oral presentation about THz sensors and technology)
- 2016: 18th International Conference on Microwave and Terahertz Technology in New York (Dissertation presentation) <https://waset.org/abstracts?q=Bolakis&search=Search>
- 2010 Colloquium lecture at Johns Hopkins Uni. / Applied Physics Laboratory (Thesis Presentation) <https://www.jhuapl.edu/colloquium/Archive/Detail?colloqid=419>
- 2010 Electronic Materials Symposium in Santa Clara (Oral Presentation about THz high absorbing materials) <https://wu.mse.berkeley.edu/ems/flyer%202010.pdf>
- 2010 APS Meeting in Portland (Oral Presentation about Enhancing THz Absorption using Thin-Film Multilayer Stacks) <http://meetings.aps.org/Meeting/MAR10/Session/W15.9>

Honors and Awards

- Excellence in research award from the Johns Hopkins University/Applied Physics Laboratory (2010)
- Outstanding thesis award from the Naval Postgraduate School (2010)
- Chief of the Hellenic Naval Academy (due to the highest GPA) (2002 - 2003)

Memberships

During my master's degree at the NPS, I was awarded the space systems certificate and considered for designation as a member of the USN Space Cadre

References

References are available on request

Christos Bolakis
March 2023