1. Personal Information

Name:	Alexandros Banis
Date and place of birth:	30.05.1993 – Athens, Greece
Nationality:	Greek
E-mail:	a.banis@inn.demokritos.gr
Telephone:	+30 2106503327
ORCID:	https://orcid.org/0000-0002-6728-8569
Scopus Author ID:	57208242329

2. Professional Activity

04/2024 - present

Post-Doctoral Researcher

Electron Microscopy and Nanomaterials Lab (EMNL), Institute Nanoscience Nanotechnology (INN), NCSR Demokritos, Athens, Greece
Supervisor: Dr. N. Boukos, Research Director

01/2024 - present

Researcher – External Associate

School of Mining and Metallurgical Engineering, Division of Metallurgy and Materials Science, NTUA, Greece. Scientific Coordinator: Assoc. Prof. M. Taxiarchou

'SkiComCu-LL. SkiComCu-Lifelong Learning Course for skills & competences in the Copper sector'

09/2021 – 12/2023

Post-Doctoral Researcher

Department of Electrical Energy, Metals, Mechanical Constructions & Systems Faculty of Engineering and Architecture, Universiteit Gent, Ghent, Belgium. Supervisor: Prof. R.H. Petrov

'Design of Lightweight Steels for Industrial Applications', Research Fund for Steel and Coal, Project Coordinator: Dr. Ilchat Sabirov, Senior Researcher

09/2021 - present

Teaching Assistant

Department of Electrical Energy, Metals, Mechanical Constructions & Systems Faculty of Engineering and Architecture, Universiteit Gent, Ghent, Belgium.

Metal Processing and Technology, R.H. Petrov

Micro-analysis and Structure Determination in Materials Science, R.H. Petrov

Microstructure-Property Control of Metals, S. Claessens, R.H. Petrov

Microstructurele opbouw van de materialen, M. Sluiter, R.H. Petrov

Fracture and Deformation Behavior of Materials, L. Kestens

School of Mining and Metallurgical Engineering, Division of Metallurgy and Materials Science, NTUA, Greece.

Casting & Forming Processes of Metals, S. Papaefthymiou

Metallurgy of Welding – Technology & Control of Weldments, S. Papaefthymiou

Thesis supervision

- Supervision of 3 Diploma Theses in NTUA, 2017-2021
- Supervision of 3 M.Sc. Theses in UGent, 2021-2023
- Supervision of 2 Exchange Ph.D. students in UGent, 2023

07/2015 – 09/2015 **Intern**

Theoretical & Physical Chemistry Institute, National Hellenic Research Foundation, Athens, Greece

Raman Spectroscopy for Chemical Analysis of glass samples to offer conductive properties under the supervision of Dr. Kamitsos E.

07/2013 - 09/2013 **Intern**

Electron Microscopy and Nanomaterials Lab (EMNL), Institute Nanoscience Nanotechnology (INN), NCSR Demokritos, Athens, Greece

Preparation of metallic samples and observation with Scanning Electron Microscopy under the supervision of Dr. Travlos A.

3. Studies

03/2017 – 03/2021 **Ph.D. Student**

School of Mining and Metallurgical Engineering, Division of Metallurgy and Materials Science, NTUA, *Greece.* Supervisor: Assoc. Prof. S. Papaefthymiou

'The effect of Ultra-Fast Heat treatments on the microstructure evolution of Automotive Steels'

10/2018 – 07/2019 **Ph.D. Exchange Student via the Erasmus+ Program**

Department of Electrical Energy, Metals, Mechanical Constructions & Systems Faculty of Engineering and Architecture, Universiteit Gent, Ghent, Belgium. Supervisor: Prof. R.H. Petrov

09/2011 - 11/2016 **Diploma of Mining & Metallurgical Engineering**

School of Mining and Metallurgical Engineering, NTUA, Greece, Grade: 7.64

02/2016 – 07/2016 **Diploma Thesis via the Erasmus+ Program**

Institute of Ferrous Metallurgy, Rheinisch – Westfälische Technische Hochschule, Aachen, Germany. Supervisors: Assoc. Prof. S. Papaefthymiou, Prof. W. Bleck,

'Influence of heat treatment on cold-rolled high strength Dual Phase steels for application in the automotive industry'

4. Awards

07/2022 'Iakovos Gkiourounlian' Award for Best Ph.D. Thesis in the School of Mining and Metallurgical Engineering in 2021

06/2021 'Thomaidion' Award of NTUA for the publication: The formation of a mixed martensitic/bainitic microstructure and the retainment of austenite in a medium-

	carbon steel during ultra-fast heating (2021) Materials Today Communications, Vol. 26, art. no. 101994
06/2019	'Thomaidion' Award of NTUA for the publication: The effect of ultra-fast heating on the microstructure, grain size and texture evolution of a commercial low-C, medium-Mn DP steel (2019), Metals 9 (8), 877

5. Membership of Professional and Scientific Societies

10/2017 - present	Technical Chamber of Greece
20/2022 - present	Hellenic Metallurgical Society
09/2024 – present	Hellenic Microscopy Society

6. Languages

English	Greek
C2 (Proficiency) Fluent speaker	Native speaker

7. Research-related skills

MS Office®	Excellent knowledge of Word, Excel, PowerPoint, Outlook
Thermocalc®	Basic knowledge and practice during Diploma Thesis
Metallographic Sample Preparation and Heating Treatment	Advanced training in sample preparation for microstructural characterization, Micro-hardness analysis, Light Optical Microscopy, Dilatometry, resistance and saltbath furnaces
Scanning Electron Microscopy	Advanced training in the use of the SEM, EDS equipment: FEI Quanta TM 450-FEG-SEM, FEI Quanta Inspect SEM, and Jeol6380LV SEM
Transmission Electron Microscopy	Advanced training in the use of the TEM, STEM, EDX equipment: Jeol 2100 HR TEM, Jeol 2200FS TEM, Thermo Fisher Scientific Talos F200i S/TEM
Electron Back-Scatter Diffraction	Advanced training in the use of the EBSD and TKD equipment: EDAX TSL–OIM-Data Collection
X-Ray Diffraction	Advanced training in the use of the XRD equipment: Bruker D8 Focus XRD
Mechanical Testing	Advanced training in the use of the tensile testing equipment: Instron 5569
Synchrotron	Beamtime at the Deutsches Elektronen-Synchrotron (DESY), 3rd Generation Synchrotron Radiation Source (PETRA III), Proposal ID: I-20230549 EC

8. Journal Publications

10 publications in peer-reviewed journals with a total of 116 citations and an h-index of 6

- **A. Banis** and S. Papaefthymiou, Microstructure Characterization of an Ultra-Fast Heated Medium Carbon Chromium-Manganese, High Strength Steel, *International Journal of Metallurgy and Metal Physics*, **2018**, 3:021, https://doi.org/10.35840/2631-5076/9221

- S. Papaefthymiou, **A. Banis**, M. Bouzouni, R. H. Petrov, Effect of ultra-fast heat treatment on the subsequent formation of mixed martensitic/bainitic microstructure with carbides in a CrMo medium carbon steel, *Metals*, **2019**, 9:312, https://doi.org/10.3390/met9080877

- **A. Banis**, E. Hernandez Duran, I. Sabirov, V. Bliznuk, R. H. Petrov, S. Papaefthymiou, The effect of ultra-fast heating on the microstructure, grain size and texture evolution of a commercial low-C, medium-Mn DP steel, *Metals*, **2019**, 9:877, https://doi.org/10.3390/met9030312

- **A. Banis**, M. Bouzouni, R. H. Petrov, S. Papaefthymiou, Simulation and characterization of the microstructure of ultra-fast heated dual-phase steel, *Materials Science and Technology*, **2020**, 36:12, https://doi.org/10.1080/02670836.2020.1777508

- **A. Banis**, M. Bouzouni, E. Gavalas, S. Papaefthymiou, The formation of a mixed martensitic/bainitic microstructure and the retainment of austenite in a medium-carbon steel during ultra-fast heating, *Materials Today Communications*, **2021**, Vol. 26, art. no. 101994, https://doi.org/10.1016/j.mtcomm.2020.101994

- **A. Banis,** A. Gomez, V. Bliznuk, A. Dutta, I. Sabirov, R. H. Petrov, Microstructure evolution and mechanical behavior of Fe–Mn–Al–C low-density steel upon aging, *Materials Science and Engineering: A*, **2023**, Volume 875, 145109, https://doi.org/10.1016/j.msea.2023.145109

- **A. Banis,** A. Gomez, A. Dutta, I. Sabirov, R. H. Petrov, The effect of nano-sized κ-carbides on the mechanical properties of an Fe-Mn-Al-C alloy, *Materials Characterization,* **2023***,* Volume 205, 113364, https://doi.org/10.1016/j.matchar.2023.113364

- J. Li, Y. Xu, Y. Jing, Y. Gao, H. Liu, Y. Yu, **A. Banis**, L.A.I. Kestens, R.H. Petrov, Improving the strength-ductility balance of medium-Mn Q&P steel by controlling cold-worked ferrite microstructure *Materials Characterization*, **2023**, Volume 205, 113377, https://doi.org/10.1016/j.matchar.2023.113377

- A. Gomez, **A. Banis**, M. Avella, J.M. Molina-Aldareguia, R.H. Petrov, A. Dutta, I. Sabirov, The effect of κ-carbides on high cycle fatigue behavior of a Fe-Mn-Al-C lightweight steel, *International Journal of Fatigue*, **2024**, Volume 184, 108306 https://doi.org/10.1016/j.ijfatigue.2024.108306

- D. Koukoufilippou, I. Liakos, G. Pilatos, N. Plakantonaki, **A. Banis**, N. Kanellopoulos, Separation of Magnesium and Lithium Ions Utilizing Layer-by-Layer Polyelectrolyte Modification of Polyacrylonitrile Hollow Fiber Porous Membranes, *Materials*, **2024**, Volume 17, 23, https://doi.org/10.3390/ma17235878

9. Conference presentations

- **A. Banis***, M. Bouzouni, M. Karna, A. Vazdirvanidis and S. Papaefthymiou, Effect of Ultrafast Heating on the Microstructure Evolution of a Medium Carbon Chromium Manganese Steel
M&M Microscopy & Microanalysis Meeting, August 05-09, 2018, Baltimore, MD, USA

- **A. Banis***, E. Hernandez Duran I. Sabirov, V. Bliznuk, R.H. Petrov, S. Papaefthymiou, Effect of ultra-fast heat treatment on the texture and grain size of the microstructural constituents of a DP steel
  Rex&GG: 7th International Conference on Recrystallization and Grain Growth, August 04-09, 2019, Ghent, Belgium

- **A. Banis***, M. Bouzouni, R. Petrov, S. Papaefthymiou, The effect of the parent austenite carbon content on the microstructure of ultra-fast heat-treated steels
  EUROMAT 2019, September 01-05, Stockholm, Sweden

- **A. Banis***, E. Hernandez Duran I. Sabirov, V. Bliznuk, R.H. Petrov, S. Papaefthymiou, Effect of ultra-fast heat treatment on the texture and grain size of an industrial grade DP 600 steel
  7th Panhellenic Conference on Metallic Materials, 11-13 December 2019, Athens, Greece

- **A. Banis***, A. Gómez, A. Dutta, F. Vercruysse, I. Sabirov, R. H. Petrov, The effect of κ-carbides on the microstructure and properties of low-density steel
  ICSMA 2021: The 19th International Conference on Strength of Materials, 26 Jun-1 Jul 2022 Metz, France

- **A. Banis***, A. Gómez, A. Dutta, V. Bliznuk, I. Sabirov, R. H. Petrov, The precipitation of κ-carbides through spinodal decomposition in austenitic low-density steels
  8th International Conference of the Hellenic Metallurgical Society, 14-16 December 2022, Patras, Greece

- **A. Banis***, I. Sabirov, R.H. Petrov, The effect of aging on the mechanical properties and texture of low-density steel (Poster)
  Rex&GG: 8th International Conference on Recrystallization and Grain Growth, 15-19 May 2023, Copenhagen, Denmark

- **A. Banis***, A. Gómez, I. Sabirov, R. H. Petrov, The effect of κ-carbides on the deformation of Fe-Mn-Al-C steel after aging
  7th International Conference of Engineering Against Failure, 21-23 June 2023, Spetses, Greece

- A. Sierra-Soraluce, A. Gomez, **A. Banis**, R. Petrov, J. Molina-Aldareguia, A. Dutta, I. Sabirov*, Fatigue behaviour of advanced high strength steels
  7th International Conference of Engineering Against Failure, 21-23 June 2023, Spetses, Greece

- S. Papaefthymiou, **A. Banis***, I. Sabirov, R. Petrov, Microstructure, texture, and properties correlation of an Ultra-Fast Heat treated commercial grade steel
  7th International Conference of Engineering Against Failure, 21-23 June 2023, Spetses, Greece

- **A. Banis**, K. Nikolic, L. Malet, R. Petrov*, Microstructure of White Etching Area around Subsurface Cracks in Bearings
  7th International Conference of Engineering Against Failure, 21-23 June 2023, Spetses, Greece

- **A. Banis***, A. Gómez, V. Bliznuk, I. Sabirov, R. H. Petrov, The effect of K-carbide precipitation on the microstructure and properties of a low-density austenitic steel
  THERMEC23, 2-7 July 2023, Vienna, Austria

- **A. Banis**, L. Sàbat , E. Hernandez Duran , R. H. Petrov*, Microstructure of AHSS produced via ultrafast heating and thermal cycling
  THERMEC23, 2-7 July 2023, Vienna, Austria

- **A. Banis**, E. Polatidis, I. Sabirov, R.H. Petrov, The formation of κ-carbides through spinodal decomposition (Poster),
  ATMATEN 2024, 28-29 September 2024, Thessaloniki, Greece

** Presenter*

10. Reviewer

04/2023- present	Reviewer for the Journal of Materials Science and Engineering A, Elsevier
12/2023 - present	Reviewer for the journal: Steel Research International
06/2024 - present	Reviewer for the journal: Materials Today Communications
09/2023	Reviewer for the Conference Proceedings of the 7th ICEAF Conference, 2023

11. Other

Organization skills

- Symposium coorganizer: 'Alloy and microstructure design of AHSS to improve their performance', 7th International Conference of Engineering Against Failure – ICEAF, Spetses, Greece, June 2023
- Session organizer: 'Damage tolerant design of AHSS for improved fracture and damage response with emphasis on alloy and microstructure engineering', 8th International Conference of Engineering Against Failure – ICEAF, Kalamata, Greece, June 2025
- Organization and implementation of the course: 'Microstructurele opbouw van de materialen', Ghent University, Prof. M. Sluiter
- Organizing committee: 7th Panhellenic Conference of the Hellenic Metallurgical Society, 11-13 December 2019, National Technical University of Athens, Greece
- Organizing committee: 59th Demokritos Summer School, Satellite event: Advancements in Transmission Electron Microscopy and Spectroscopy: Exploring analytical and quantitative techniques, July 2024

Volunteering

- Board of European Students of Technology, Full member, 2014-2016
- Erasmus Student Network, Full member, 2014-2016
- European Researcher's Night, volunteer, Athens, Greece, 2012-2014
- FEMS EUROMAT 2017, volunteer, Thessaloniki, Greece