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| 1. **Personal Information** | | |
| Name: | Alexandros Banis |  |
| Date and place of birth: | 30.05.1993 – Athens, Greece |
| Nationality: | Greek |
| E-mail: | [a.banis](mailto:a.banis)@inn.demokritos.gr |
| Telephone: | +30 2106503327 |
| ORCID:  Scopus Author ID: | <https://orcid.org/0000-0002-6728-8569>  57208242329 |  |

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| 1. **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 |
| 07/2015 – 09/2015 | **Intern**  *National Hellenic Research Foundation, Theoretical & Physical Chemistry Institute*  Raman Spectroscopy for Chemical Analysis of glass samples to offer conductive properties under the supervision of Dr. Kamitsos E., Research Director |
| 07/2013 - 09/2013 | **Intern**  *N.C.S.R. Demokritos, Material Science Institute*  Preparation of metallic samples and observation with Scanning Electron Microscopy under the supervision of Dr. Travlos A., Research Director |

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| 1. **Participation in National and International Scientific Projects** | |
| 01/2025 – present | « Ανάπτυξη αποδοτικών ΦΒ υλικών και διατάξεων τρίτης γενιάς για την ενίσχυση της ανταγωνιστικότητας του παραγωγικού τομέα στην πράσινη ενέργεια (TAEDR -0537347)» που υλοποιείται στο πλαίσιο της Δράσης «Εμβληματικές δράσεις σε διαθεματικές επιστημονικές περιοχές με ειδικό ενδιαφέρον για την σύνδεση με τον παραγωγικό ιστό» (ID 16618) με κωδικό ΟΠΣ ΤΑ 5149305 του Ελλάδα 2.0 - Ταμείο Ανάκαμψης και Ανθεκτικότητας με την χρηματοδότηση της Ευρωπαϊκής Ένωσης – NextGenerationEU, Επιστημονικός Υπεύθυνος: Δρ. Π. Φαλάρας |
| 01/2024 – present | **EIT Raw Materials**  ‘SkiComCu-LL. SkiComCu-Lifelong Learning Course for skills & competences in the Copper sector’  *School of Mining and Metallurgical Engineering, Division of Metallurgy and Materials Science, NTUA, Greece. Scientific Coordinator: Assoc. Prof. M. Taxiarchou* |
| 09/2021 – 12/2023 | **Research Fund for Coal and Steel**  DELIGHTED: ‘Design of Lightweight Steels for Industrial Applications’  Department of Electrical Energy, Metals, Mechanical Constructions & Systems Faculty of Engineering and Architecture, Universiteit Gent, Ghent, Belgium. Scientific Coordinator: Dr. Ilchat Sabirov, Senior Researcher |

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| 1. **Teaching Assistance** | |
| 03/2017 – 03/2021 | **Teaching Assistant**  *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 and Control of Weldments, S. Papaefthymiou |
| 09/2021 – 12/2023 | **Teaching Assistant**  *Department of Electrical Energy, Metals, Mechanical Constructions & Systems Faculty of Engineering and Architecture, Universiteit Gent, Ghent, Belgium.*   * Metal Processing and Technology, R.Η. Petrov * Micro-analysis and Structure Determination in Materials Science, R.Η. 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 |
| 03/2017 – present | **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 |

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| 1. **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’ |

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| 1. **Awards** | |
| 03/2025 | **Seal of Excellence**: Horizon Europe Marie Skłodowska-Curie Actions for the project proposal 101207873 — MAGSTEEL: “Development of Strong and Ductile Steel for Soft Magnetic Applications for Efficient Energy Conversion” |
| 07/2022 | ‘Jacob Gkiourounlian’ Award for Best Ph.D. Thesis in the School of Mining and Metallurgical Engineering in 2021 |
| 06/2022 | ‘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 |
| 05/2022 | ‘Thomaidion’ Award of NTUA for the publication: Τhe 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 |

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| 1. **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 |

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| 1. **Languages** | |
| **English** | **Greek** |
| C2 (Proficiency) Fluent speaker | Native speaker |

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| 1. **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 |
| Computer programming techniques (C++) | Certification of Specialized Education by the Center of Education and Lifelong Learning of the National Technical University of Athens. |

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| 1. **Journal Publications** |
| *10 publications in peer-reviewed journals with a total of 150 citations and an h-index of 7* |
| * **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> |

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| 1. **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* |

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| 1. **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, Elsevier |
| 12/2023 - present | Reviewer for the journal: Materials Today Communications, Elsevier |
| 09/2023 | Reviewer for the Conference Proceedings of the 7th ICEAF Conference, 2023 |

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| 1. **Other** |
| *Organization skills*   * Symposium co-organizer: ‘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 |