



**First name(s) /
Surname(s)**

Address (business)

Telephone

E-mail

Nationality:

Positions (at moment)

Dates

Occupation or position held

**Name and address of
employer**

**Main Activities and
Responsibilities**

Dates

Occupation or position held

**Name and address of
employer**

**Main Activities and
Responsibilities**

Dates

Occupation or position held

**Name and address of
employer**

**Main Activities and
Responsibilities**

ZDRAVKA GEORGIEVA MOLLOVA

University of Mining and Geology, "St. Ivan Rilski"

Faculty of Mining Technology, Department of Explosive Technique and Technologies, Prof. Boyan Kamenov Str., 1700 Studentski Grad, Sofia, Bulgaria

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Bulgarian

February 2026 → Present

Associate Professor

University of Mining and Geology "St. Ivan Rilski"

Faculty of Mining Technology, Department of Explosive Technique and Technologies, Prof. Boyan Kamenov Str., 1700 Studentski Grad, Sofia, Bulgaria

Higher education, teaching, and research activities, Professional Field: 5.7
Architecture, Construction and Geodesy

December 2021 – February 2026

Chief Assistant Professor

University of Mining and Geology "St. Ivan Rilski"

Faculty of Mining Technology, Department of Explosive Technique and Technologies, Prof. Boyan Kamenov Str., 1700 Studentski Grad, Sofia, Bulgaria

Higher education, teaching, and research activities, Professional Field: 5.7
Architecture, Construction and Geodesy

December 2021 → Present

Chief Expert

University of Mining and Geology "St. Ivan Rilski"

Higher School for Training of Personnel for Blasting Operations, Prof. Boyan Kamenov Str., 1700 Studentski Grad, Sofia, Bulgaria

Organization, execution, and certification of training programs for obtaining professional qualifications for handling explosive materials.

Dates	January 2014 – December 2021
Occupation or position held	Senior Expert
Name and address of employer	University of Mining and Geology “St. Ivan Rilski” Higher School for Training of Personnel for Blasting Operations, Prof. Boyan Kamenov Str., 1700 Studentski Grad, Sofia, Bulgaria
Main Activities and Responsibilities	Organization, execution, and certification of training programs for obtaining professional qualifications for handling explosive materials.

Education and training

Dates	2018r.-2021
Title of qualification awarded	Educational and Scientific degree "Doctor" (PhD), Diploma № 106/28.05.2021; Scientific specialty “Blasting equipment and technology – production of blasting materials”, Professional Field: 5.7 Architecture, Construction and Geodesy
Educational institution	University of Mining and Geology “St. Ivan Rilski”, Faculty of Mining Technologies, Department of Underground Construction
Dates	2014r.–2016
Title of qualification awarded	Master's Degree – National Security and Defence
Educational institution	National Defence College „G. S. Rakovski”, Faculty of „National Security and Defense“ 1504 Sofia, Bulgaria, 82 Evlogi i Hristo Georgievi Blvd
Dates	2005r.–2007r.
Title of qualification awarded	Master's Degree - International Relations and Security Studies
Educational institution	Sofia University "St. Kliment Ohridski", Department of Political Science 1504 Sofia, Bulgaria, 15, Tzar Osvoboditel Blvd.

Other language(s)

English
Russian

English

Russian

Understanding				Speaking				Writing	
Listening		Reading		Interaction		Production			
B2	Independent User	B2	Independent User	B2	Independent User	B2	Independent User	B2	Independent User
B1	Independent User	B1	Independent User	B1	Independent User	B1	Independent User	B1	Independent User

Technical and Computer Skills

MS Office (Word, Excel, PowerPoint, OneNote, Publisher, Outlook),
Adobe Photoshop, CorelDRAW, Adobe Illustrator, Adobe Flash, SHOTPlus.

Organizational Skills and Competences

Academic Coordination: Organization and coordination of the educational process, including scheduling and conducting lectures, seminars, and examinations.

Curriculum Development: Designing and updating curricula and syllabi to meet contemporary educational standards.

Training Management: Organizing student internships and specialized training programs, particularly in the field of blasting operations.

Teamwork & Collaboration: Proven ability to work effectively within

academic and inter-institutional teams.

Project & Time Management: Strong commitment to meeting deadlines, administrative precision, and high levels of self-discipline.

Professional Profile and Applications

Lecturer in Blasting Technique and Technologies: Specialist in academic instruction and curriculum delivery for explosive engineering.

Expert in Training and Certification: Senior expert in the qualification and certification of technical personnel for handling explosives.

Researcher and Author: Author of scientific publications and specialized educational materials in the field of mining and blasting.

Project Participant: Active contributor to various scientific, research, and educational projects.

Consultant in Blasting Optimization and Safety: Professional consultant focusing on the optimization of blasting operations and safety protocols within the mining industry.

Professional and Research Interests

Blasting Technique and Technologies: Advanced methods and equipment for industrial blasting operations.

Optimization of Blasting Operations: Increasing efficiency and reducing costs in mining and construction projects.

Development and Application of Low-Carbon Footprint Explosives: Research focused on sustainable and environmentally friendly energetic materials.

Safety in Explosives Handling: Protocols and technologies for ensuring safety during the use and storage of explosive materials.

Counter-Terrorism and Prevention of Attacks Using Explosives: Security strategies and technical analysis to prevent the illicit use of explosive substances.

Modern Initiation Systems: Research and implementation of advanced electronic and non-electric initiation technologies.

Преподавателска дейност

Lecturer for Bachelor's (BSc) and Master's (MSc) degree programs

Courses Taught:

- Introduction to the Specialty
- Blasting Technique and Technologies
- Design of Blasting Operations
- Surface Blasting Operations
- Underground Blasting Operations
- Urban Blasting Operations
- Explosion Phenomena and Explosive Materials
- Regulatory Requirements for Blasting Operations

Curriculum Development: Developed new syllabi, lecture courses, and practical seminars for the following disciplines:

- Introduction to the Specialty
- Blasting Technique and Technologies
- Blasting Technologies
- Explosion Phenomena and Explosive Materials
- Regulatory Requirements for Blasting Operations

Membership in Professional Organizations and Academic Boards

Member of the Faculty Council of the Faculty of Mining Technology at the University of Mining and Geology "St. Ivan Rilski".

Member of the Academic Council of the University of Mining and Geology "St. Ivan Rilski".

Member of the General Assembly of the University of Mining and Geology "St. Ivan Rilski".

Participation in Scientific Conferences, Congresses, and Symposia

- International Scientific Conference of the University of Mining and Geology "St. Ivan Rilski", 2019, Sofia, Bulgaria
- International Scientific Conference of the University of Mining and Geology "St. Ivan Rilski", 2020, Sofia, Bulgaria
- 7th National Scientific and Technical Conference with International Participation "Technologies and Practices in Underground Mining and Mine Construction", 2020, Devin, Bulgaria
- International Scientific Conference of the University of Mining and Geology "St. Ivan Rilski", 2021, Sofia, Bulgaria
- XVI International Conference on Open and Underwater Mining of Minerals, 2021, Varna, Bulgaria
- Second Conference on Sustainable Development: Industrial Future of Territories – IFT 2021, Ural State University of Economics, 24 September 2021, Yekaterinburg, Russia
- International Scientific Conference of the University of Mining and Geology "St. Ivan Rilski", 2024, Sofia, Bulgaria
- XXIV Conference of PhD Students and Young Scientists, Wrocław University of Science and Technology, Faculty of Geoengineering, Mining and Geology, 23–25 October 2024, Wrocław, Poland

Projects

- **Participation in seven research, applied, and innovation projects** in the field of blasting technique and technologies.
- **Development of a Technical Passport for an Explosives Storage Facility**, located in the area of Lozarevo village, "Sredna Kaba" locality, Sungurlare Municipality, Burgas District (2019).
- **Development of manufacturing technology for pyrotechnic devices** (pyro-cartridges and pyro-strips) designed for dye dispersion in portable safes, including dye container design (2017).
- **Technical liquidation and mitigation of environmental impacts** resulting from the cessation of coal mining activities within the city of Pernik (2019).
- **Blasting Operations Project (BOP)** for the reconstruction of the "Vratsa – 1" gas pipeline branch, in the section from Valve Station 4 to the Chiren Underground Gas Storage (2020).
- **Evaluation and Technical-Economic Analysis of options** for the construction of underground vs. surface explosives storage facilities for "Trace Resources" Ltd. (2021).
- **Project Leader of the research project:** *"Increasing the Efficiency of Drilling and Blasting Operations by Optimizing the Detonation Velocity of Main Charges from Low-Sensitivity Explosives"*, funded by the Research Sector of the University of Mining and Geology (UMG) under the Ordinance for Scientific Activity, Contract № 182/09.05.2022.
- **Researcher in the project:** *"Optimizing the Process of Explosive Fragmentation of Heterogeneous Rock Masses Using Shaped Charges in Surface and Underground Conditions"*, realized under the National Program "Young Scientists and Postdoctoral Students – 2" (2023).

Publications (Appendix 1)

Author of 12 scientific publications in specialized peer-reviewed international and Bulgarian scientific journals and conference proceedings; co-author of one book and author of two independent monographs.

PUBLICATIONS

- **Mollova Z.**, Blast load analysis and effect on building structures, *Journal of Mining and Geological Sciences*, Volume 62, Number 2, Sofia, 2019, pp.75-81, ISSN 2738-7100 (print)
- **Mollova Z.**, New insights into the impact of blast wave on the human body, *Journal of Mining and Geological Sciences*, Volume 62, Number 2, Sofia, 2019, pp.70-75, ISSN 2738-7100 (print)
- **Mollova Z.**, Penev V. Control of blast-induced seismic action generated by technological blastings, *Sustainable extraction and processing of raw materials journal*, Volume 1, Sofia, 2020, pp. 64-67 ISSN 2738-7100 (print)
- Penev. V., **Mollova Z.** Design optimization of drilling and blasting operations: a case study on copper ore mining in Asarel, *Journal of Mining and Geological Sciences*, Volume 63, 2020, pp.84-88 ISSN 2682-9525 (print)
- Belin V. A., **Mollova Z.** Influence of the type of donor charges on the detonation rate of low-sensitivity explosives, *Sustainable Development of Mountain Territories*. T.13, No1 (47), 2021, pp. 112-119 , ISSN 1998-4502
- **Mollova Z.** Development of a model for assessing the impact of an explosion on buildings and facilities when using blast walls, *Annual of University of Mining and Geology "St. Ivan Rilski"* – Sofia, T. 64, 2021, ISSN 1312-1820
- **Mollova Z.** Investigation of the velocity of detonation of low-sensitivity explosives depending on the type of intermediate detonators, *Magazine "Mining and Geology"*, Sofia, Issue 10/2022, pp. 46–51, ISSN 0861-5713; ISSN 2603-4549
- **Mollova Z.** Effect of cumulation on detonation velocity of low sensitivity explosives, *Mining Science*, Wroclaw University of Technology, Vol. 30, 2023, pp. 171–181, ISSN 2300-9586, e-ISSN 2353-5423, DOI: 10.37190/msc233011
- Nalyvaiko O., Romashko O., Mitkov V., and **Mollova Z.**, Prevention of crystallisation of asphalt-resin-paraffin deposits under the influence of a permanent magnetic field, *Municipal Economy of Cities*, vol. 3, no. 184, pp. 36–45, Jun. 2024. doi:10.33042/2522-1809-2024-3-184-36-45
- Nalivayko O., Mitkov V., Romashko O., **Mollova Z.** Improving the cementing of oil and gas wells production strings with hydrophobic materials of the “RAMSINKS–2” group in various mining and geological conditions, *Annual of the University of Mining and Geology “St. Ivan Rilski”*, Vol. 67, 2024, pp. 114–118, ISSN 1312-1820
- **Mollova Z.** Advancements in civil explosives: Novel formulations and sustainable fuel solutions, *Sustainable Extraction and Processing of Raw Materials*, 2024, ISSN 2738-7100 / 2738-7151, DOI: [10.58903/dv69110148](https://doi.org/10.58903/dv69110148)
- **Mollova Z.** Investigation of the effect of the cast booster with cumulative effect on arrays with the presence of solid inclusions, *Mining Science*, Wroclaw University of Technology, Vol. 31, 2024, pp. 249–257, ISSN 2300-9586, DOI: 10.37190/msc243114
- **Mollova, Z.** Prevention of Terrorist Attacks. Sofia: University of Mining and Geology “St. Ivan Rilski” Publishing House, 2024. ISBN 978-954-353-478-4. 164 p.
- **Mollova, Z. G.** Technologies for Rock Mass Fragmentation with Shaped Charges: A Monograph. Sofia: University of Mining and Geology “St. Ivan Rilski”, 2025. ISBN 978-954-353-491-3.
- Mitkov, V., Shishkov, P., **Mollova, Z.** Pyrotechnic Compositions and Devices. Sofia: Print Factor, 2024. ISBN 978-619-7427-35-6.