



Vanja Asanovic

Date of birth: 14/10/1966 | **Nationality:** Montenegrin | **Gender:** Female |

Phone number: (+382) 67265555 (Mobile) | **Email address:** vanjaa@ucg.ac.me |

Website: ucg.ac.me/radnik/150123-vanja-asanovic | **LinkedIn:**

[linkedin.com/in/vanja-asanovic-phd](https://www.linkedin.com/in/vanja-asanovic-phd) | **Skype:** vanja.asanovic2 |

Address: 18, Bulevar Džordža Vasiingtona, 81000, Podgorica, Montenegro (Home)

● ABOUT ME

Teaching experiences: field of material science and environmental management.

Expertises and reports: environmental protection.

My research addresses several topics: mechanochemical synthesis, nanocomposites, materials for hydrogen storage, phase change materials, shape memory alloys, Cu-based alloys, steels and aluminium alloys; machine learning in materials science, materials characterization, environmental protection, waste management.

I was the first director of the Bureau of Metrology since its establishment in 2006. I was focused on establishing national calibration laboratories, developing services in legal, industrial and scientific metrology, and controlling precious metal articles in Montenegro. I represented the Bureau of Metrology and Montenegro in metrological international and regional organizations until February 2021.

● WORK EXPERIENCE

15/12/2021 – CURRENT Podgorica, Montenegro

FULL PROFESSOR (FULL-TIME) UNIVERSITY OF MONTENEGRO, FACULTY OF METALLURGY AND TECHNOLOGY

Teaching at undergraduate and specialist studies at the Faculty of Metallurgy and Technology:

Courses: *Phase Transformation, Structure of Alloys, Physics of strength and plasticity, Materials Characterization, Kinetics and Mechanism of Phase Transformations, Electron Microscopy and X-ray analysis, Physical Metallurgy (selected topics) and Physics of Materials* (Study programme: Metallurgy and Materials).

Teaching at master and doctoral studies:

Course: *Dispersion modelling of pollutants* (Master study at the Faculty of Metallurgy and Technology, Study programme: Environmental Protection)

Courses: *Phase Transformations (selected chapters), Thermodynamics (higher level) and Design and Strengthening Mechanisms in Materials* (Doctoral study at the Faculty of Metallurgy and Technology).

Research areas: *physical metallurgy, phase transformation in metals and alloys, electron microscopy, optical microscopy, shape memory alloys, phase change materials, hydrogen storage, nanocomposites, environmental protection, waste management.*

10/2021 – 12/2021 Podgorica, Montenegro

FULL PROFESSOR (PART-TIME) UNIVERSITY OF MONTENEGRO, FACULTY OF METALLURGY AND TECHNOLOGY

Courses: *Phase Transformation, Materials Characterization, Kinetics and Mechanism of Phase Transformations, Electron Microscopy and X-ray analysis, Physical Metallurgy (selected topics) and Physics of Materials* (Study programme: Metallurgy and Materials).

Course: *Waste Management* (Study programme: Environmental Protection).

Course: *Metrology* (Master study at the Faculty of Mechanical Engineering)

Courses: *Phase Transformations (selected chapters) and Design and Strengthening Mechanisms in Materials* (Doctoral study at the Faculty of Metallurgy and Technology, Study programme: Metallurgy and Materials).

Research areas: *physical metallurgy, phase transformation in metals and alloys, electron microscopy, optical microscopy, shape memory alloys, phase change materials, hydrogen storage, nanocomposites, environmental protection, environmental quality, waste management.*

01/09/2010 – 11/02/2021 Podgorica, Montenegro

FULL PROFESSOR (PART-TIME) UNIVERSITY OF MONTENEGRO, FACULTY OF METALLURGY AND TECHNOLOGY

Teaching (courses: Phase Transformation, Materials Characterization, Kinetics and Mechanism of Phase Transformations, Electron Microscopy and X-ray analysis, Physics of Materials, Physical Metallurgy (selected topics), Waste Management, Metrology, Phase Transformations (selected chapters) and Design and Strengthening Mechanisms in Materials).

Research areas: physical metallurgy, phase transformation in metals and alloys, electron microscopy, optical microscopy, shape memory alloys, phase change materials, hydrogen storage, mechanochemistry, environmental protection, environmental quality and waste management.

02/2009 – 01/09/2010 Podgorica, Montenegro

FULL PROFESSOR (FULL-TIME) UNIVERSITY OF MONTENEGRO, FACULTY OF METALLURGY AND TECHNOLOGY

Teaching courses: Phase Transformation, Materials Characterization, Waste Management.

Research areas: physical metallurgy, phase transformation in metals and alloys, electron microscopy, optical microscopy, shape memory alloys, environmental protection, waste management.

10/2006 – 02/2021 Podgorica, Montenegro

DIRECTOR BUREAU OF METROLOGY

I was on the head of the expert team that established the Centre of Metrology in July 2006. As an acting director of new formed Bureau of Metrology, I have performed all necessary duties for establishing the metrological traceability and organizing the working procedures in the field of legal, scientific and industrial metrology as well as control of precious metal articles. One of the most critical issues was establishing the national calibration laboratories within the Bureau of Metrology in which the measurement standards of Montenegro are realised, preserved, maintained, and improved. The documentation for verifying the fulfilment of the requirements for performing the calibration of measuring instruments/measurement standards in the Bureau's laboratories was prepared by an expert team which I have led.

The most important results that were achieved in the period since the establishment of the Bureau of Metrology on September 14, 2006, up to February 11, 2021, are as follows:

- established metrological traceability in Montenegro;
- harmonisation of legislation in the field of metrology with the legislation of the European Union;
- establishment of national calibration laboratories in which Montenegrin standards are realised, stored, maintained and improved;
- confirmation of competence for performing calibration of measuring instruments/measurement standards in the laboratories of the Bureau;
- meeting the criteria for membership in international and regional organisations in the field of metrology and control of precious metal articles;
- signing the CIPM Arrangement on Mutual Recognition of Calibration and Measurement Certificates issued by the national metrological institutes of the Member States to remove technical barriers to trade;
- realisation of the Montenegrin second and participation in the realisation of UTC;
- publishing the 24 best measurement and calibration capabilities (CMC) in the database of the International Bureau of Weights and Measures KCDB-BIPM based on successful participation in interlaboratory comparisons;
- license for performing scientific research activities in the field of technical-technological and interdisciplinary sciences and registration of the Bureau in the register of innovative organisations.

From 2007 to February 2021, I have presented Montenegro and the Bureau of Metrology in the different regional and international metrological organizations as a delegate and member of varying working bodies.

I participated in preparing draft laws and bylaws in the field of metrology, draft Metrology Development Strategy in Montenegro for the period 2016-2018.

12/2003 – 02/2009 Podgorica, Montenegro

ASSOCIATE PROFESSOR UNIVERSITY OF MONTENEGRO, FACULTY OF METALLURGY AND TECHNOLOGY

Teaching (courses: Phase Transformation, Materials Characterization, Kinetics and Mechanisms of Phase Transformations, Waste Management)

Research areas: physical metallurgy, phase transformation in metals and alloys, electron microscopy, optical microscopy, shape memory alloys, environmental protection.

10/1998 – 12/2003 Podgorica, Montenegro

ASSISTANT PROFESSOR UNIVERSITY OF MONTENEGRO, FACULTY OF METALLURGY AND TECHNOLOGY

Teaching (courses: Physical Metallurgy, Phase Transformation, Materials Characterization, Kinetics and Mechanisms of Phase Transformations)

Research areas: physical metallurgy, phase transformation in metals and alloys, electron microscopy, optical microscopy, shape memory alloys.

06/1995 – 10/1998 Podgorica, Montenegro

ASSISTANT UNIVERSITY OF MONTENEGRO, FACULTY OF METALLURGY AND TECHNOLOGY

Teaching (courses: Metallography, Heat Treatment, Materials, Materials in Mechanical Engineering)

Research areas: physical metallurgy, phase transformation in metals and alloys, optical microscopy, Cu-based shape memory alloys, deformation.

02/1991 – 06/1995 Podgorica, Montenegro

TRAINEE ASSISTANT UNIVERSITY OF MONTENEGRO, FACULTY OF METALLURGY AND TECHNOLOGY

Experimental laboratory work and exercises (courses: Metallography, Heat Treatment, Materials, Materials in Mechanical Engineering)

Research areas: physical metallurgy, phase transformation in metals and alloys, optical microscopy, Cu-based shape memory alloys, cold rolling.

● EDUCATION AND TRAINING

03/1998 Podgorica, Montenegro

PHD University of Montenegro, Faculty of Metallurgy and Technology

11/1990 – 07/1994 Podgorica, Montenegro

MSC University of Montenegro, Faculty of Metallurgy and Technology

10/1985 – 06/1990 Podgorica, Montenegro

BSC University of Montenegro, Faculty of Metallurgy and Technology

● LANGUAGE SKILLS

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● ADDITIONAL INFORMATION

RECOMMENDATIONS

RECENT PROJECTS

1. Asanovic V., Grbovic-Novakovic J., "Towards hydrogen economy: Synthesis and characterization of phase change materials for thermal energy storage", Ministry of Science, bilateral project 2019-2021 (project manager)

2. Composites for all advanced materials for a modern, improved, and sustainable society – CEI Know-how Exchange Programme, 2021-2022 (team member)
3. MONtenegrin center for Underwater SEnsor Networks – HORIZON-WIDERA-2021-ACCESS-02, 2022-2025 (team member)
4. CiRcular Economy Skills enhanCEment NeTwOrk - CRESCENTO" Adriatic-Ionian ADRION Programme, 01/2023 – 09/2023 (project manager)
5. Development of Hydrogen Compressors (NO-DEPENDENCE), NATO Science for Peace and Security, 06/2023-06/2026 (project manager)

Selected papers

1. **Asanović V.**, Delijić K., Radusinović I., Bošnjak B., "The Effects of Thermomechanical Treatments on the Microstructure and Properties of Cu-Zn-Al Alloy", *High Temperature Materials and Processes*, Vol. 21, No 5 (2002) pp. 269-280
2. **Asanović V.**, Delijić K., Leka Z., "Aging Effects in Cu-Zn-Al Shape Memory Alloy", *Materials Science Forum: Progres in Advanced Materials and Processes*, Vol. 453-454, (2004) pp. 187-193.
3. **Asanović V.**, Delijić K., Leka Z., Bošnjak B., "The Effect of Heat Treatment on the Martensitic Transformation and Properties of Cu-Zn-Al Alloy", *Journal of the Mechanical Behavior of Materials*, Vol. 15, Nos. 4-5 (2004) pp. 219-238.
4. **Asanović V.**, Delijić K., Jauković Nada., Isothermal decomposition of the b' phase in Cu-Zn-Al shape-memory alloys, *Materials and Technology*, 40 (4), (2006) pp. 153-156
5. **Asanović V., Delijic K.**, "The mechanical behavior and shape memory recovery of Cu-Zn-Al alloys", *Journal of Metallurgy*, No 5, vol. 13, (2007), pp. 59-64
6. **Asanović V.**, Delijić K., Jauković N., "A Study of Transformations of b-phase in Cu-Zn-Al Shape Memory Alloys", *Scripta Materialia*, Vol 58., Issue 7, 599-601 (2008)
7. **Asanovic V.**, Raonić M., Cuturic-Knezevic N., Vukoslavovic G., Popovic M., Jestrovic V., "Quality system implementation in the National Metrology Institute of Montenegro," *Accreditation and Quality Assurance*, Vol. 23, No. 2, Apr 2018., pp. 87-96
8. Scepanovic J., **Asanovic V.**, Radonjic D., Vuksanovic D., Herenda S., Korac F., Bikic F., "Mechanical properties and corrosion behaviour of Al-Si alloys for IC engine," *J. Serb. Chem. Soc.*, Vol. 84, Issue 5, 2019, pp. 503–516
9. Scepanovic J., **Asanovic V.**, Herenda S., Vuksanovic D., Radonjic D., Korac F., "Microstructural Characteristics, Mechanical Properties, Fracture Analysis and Corrosion Behavior of Hypereutectic Al-13.5Si Alloy," *International Journal of Metalcasting*, Vol 13, Issue 3, 2019, pp. 700-714
10. Vuksanovic D., **Asanovic V.**, Scepanovic J., Radonjic D., "Effect of chemical composition and T6 heat treatment on the mechanical properties and fracture behavior of Al-Si alloys for IC engine components," *Journal of Mining and Metallurgy, Section B: Metallurgy*, Vol. 57(2), 2021, pp. 195-207
11. **Asanović V.**, Radonjic D. Šćepanović J., Vuksanovic D., "Effect of chemical composition and quenching media on recoverable strain in Cu-Zn-Al alloys," *Journal of Materials Research and Technology*, Vol 12, May-June 2021, pp. 1368-1379
12. Herenda S., **Asanović V.**, Hasković E., Radonjić D., Šćepanović J. (2023). *In vitro biomedical corrosion and enzyme activity inhibition on modified Cu-Zn-Al bioalloy*. *Corrosion Reviews* <https://doi.org/10.1515/corrrev-2022-0025>
13. **Sekulić Z., Grbović Novaković J.**, Babić B., Prvulović M., Milanović I., Novaković N., Rajnović D., Filipović N., **Asanović V.**, *Materials* 2023, accepted (Q2).

Selected papers presented at international scientific conferences

1. Sekulić Z., Milanović I., Babić B., Prvulović M., Grbović Novaković J., **Asanović V.**, "Mechanochemical synthesis of MgH₂-V nanocomposites," Twenty-third Annual Conference YUCOMAT 2022 & Twelfth World Round Table Conference on Sintering WTRCS Program and the Book of Abstracts, Materials Research Society of Serbia, August 29 – September 2, 2022, Herceg Novi, Montenegro, poster presentation P.S.III.C. 14., p. 137.
2. Sekulić Z., Milanović I., Babić B., Prvulović M., Grbović Novaković J., **Asanović V.**, "Mechanochemical Destabilization of MgH₂-V Nanocomposites for Hydrogen Storage," Book of Abstracts, 10th International Conference of Applied Science, 25-28 May 2022, Banja Luka, pp. 78.
3. Sekulić Z., Grbović Novaković J., Babić B., Prvulović M., Milanović I., Tošić K., **Asanović V.**, "Hydrogen storage properties of MgH₂-M (M=Ni, V, Cr) composites," Book of Abstracts, 6th *International Symposium of Materials for Energy Storage and Conversion mESC-IS 2022*, 5-8 July 2022, Bol, Island of Brac, Croatia.
4. Vuksanovic D., **Asanovic V.**, Cvijovic Z., Scepanovic J., Radonjic D. "Microstructure and fracture analysis of T6 treated hypereutectic Al-13.5Si alloy for IC engine components," MCM2019, 14th Multinational Congress on Microscopy, Belgrade, Serbia, September 15-20, 2019, p. 357-359
5. Bulatovic N., Vukicevic T., Sabotic R., **Asanovic V.**, "Measurements Calibration Analysis of Novel IoT Platforms," XXII međunarodni naučno-stručni skup INFORMACIONE TEHNOLOGIJE – sadašnjost i budućnost 2017, Žabljak, pp. 165-168. ISBN 978-86-85775-20-8
6. **Asanović V.**, Delijić K., "The Mechanical Behaviour and Shape Memory Recovery of Cu-Zn-Al Alloys", 4th *Balkan Conference on Metallurgy: Scientific achievements and perspectives of metals industry in South-East Europe*, Proceedings, Zlatibor, Serbia, 27-29 September 2006, p. 451-456

7. Asanović V., Delijić K., Leka Z., "Investigation of Thermally Recoverable Martensitic Deformation in a Cu-Zn-Al Alloy", II International Symposium *Light Metals and Composite materials*, Proceedings, Belgrade, Serbia and Montenegro, 19-20 May 2004, p. 67-68, (ISBN 86-904393-1-5)

8. Asanović V., Delijić K., "The Investigation of Mechanical Behaviour of Cu-based Shape Memory Alloys", EMC 2003, Hanover.

9. Asanović V. D., Marković Z. B., Vušanović I. Ć., Bošnjak B. T., Radulović B., Kostov A. I., "Isothermal decomposition of β_1 phase in a Cu-Zn-Al shape memory alloy", *Book of Abstracts - 2nd International Conference on "Chemical Sciences for Sustainable Development"*, Halkidiki, Greece, June 2000, Vol II, p. 2.

10. Asanović V., Perović B., Radusinović I., "The effects of thermal treatment on the structure of Cu-Zn-Al alloys", *Proceed. of the International Symposium on Shape Memory Alloys: Fundamentals, Modeling and Industrial Applications*; Quebec City, Quebec, Canada, Aug. 1999, p. 185 - 199.

International projects in the field of environmental protection

1. Person responsible for report:

Data Sheets for Vehicle Fuels and Emissions Country Assessment under projects: Capacity Building for Improvement of Vehicle Fuel Quality in the SEE Countries and Addressing Clean Fuel and Vehicles Issues in Central and Eastern Europe and Turkey (REC, 2005).

2. Engaged expert:

Developing activities for Protocol on Pollutant Release and Transfer Registers - PRTR Protocol in Montenegro, Aarhus project (REC, 2006).

3. Engaged expert:

Report of Implementation of the European Parliament and of the Council Providing for Minimum Criteria for Environmental Inspection in Montenegro (REC, 2006).

4. Engaged expert:

Program for Capacity Building for Implementing the Law on Environmental Impact Assessment, Strategic Environmental Assessment and Integrated Prevention and Pollution Control in Montenegro - Guide for Implementation of the Law on Integrated Pollution Prevention and Control (REC, 2009)

5. A representative of the Faculty of Metallurgy and Technology in the project NEWEN aimed to develop a network and transboundary cooperation in environmental management between the six participating Universities in the Western Balkans (WB) and the participating Universities and institutes in the Netherlands. Project NEWEN ran from October 2008 to May 2011 and was financially supported by the Dutch Ministry of Foreign Affairs.

-The first regional Workshop on Urban Solid Waste Management (11-12 June, 2009, Durres, Albania).

-Tailor made course for University staff: Course on Hazardous Waste Management (21-25 September 2009, Delft, Netherlands).

-The third regional workshop on Lake Pollution Management (8-9 March 2010).

6. Junior short term expert:

Regional Environmental Network for Accession (RENA), Europe Aid/128906/C/SER/Multi (2013)

7. Engaged expert:

Environment and Climate Regional Accession Network - ECRAN (2014)

8. Engaged expert:

Waste management in Montenegro: Preliminary Activities for Preparation of Waste Management Plan (2015).

ORGANISATIONAL SKILLS

Organisational skills Planning, teamwork, communication, decision making, strategic planning, open-mindedness, problem-solving, and strong working ethic.

ACADEMIC VISITOR

Academic visitor

Oxford Colleges Hospitality Scheme (Keble College, Department of Materials, Oxford, July 2006.)

MANAGEMENT OF RELEVANT INTERNATIONAL PROJECTS

2020 – 2023

MC member of COST action: CA18112: Mechanochemistry for Sustainable Industry

2020 – 2024

MC member of COST action: CA18224: Green Chemical Engineering Network towards upscaling sustainable processes

Write here the description...

2021 – 2024

MC member of COST action: CA19118: High-performance Carbon-based composites with Smart properties for Advanced Sensing Applications

PROFESSIONAL MEMBERSHIP

2007 – 2021

A representative of Montenegro in regional and international metrological organizations: EURAMET, WELMEC, OIML, and BIPM

2007 – CURRENT

Membership in the organizing committee of conferences related metallurgy, Materials science, quality infrastructure and metrology (more than 10).

2021 – CURRENT

Member of Materials Research Society of Serbia

2021 – CURRENT

A prominent expert in evaluating competencies, knowledge and abilities in the process of employment (Human Resources Management Authority).

2022 – CURRENT

Expert (academic staff) for accreditation of study programs, i.e. re-accreditation of higher education Institution (Agency for Control and Quality Insurance of Higher Education)

THE REVIEWER OF JOURNAL PAPERS

2016 – CURRENT

Different scientific journals

International journal of Metalcasting, Journal of Mining and Metallurgy (Section B: Metallurgy), Journal of Materials Research and Technology, Environmental Engineering and Management Journal, Indian Journal of Engineering and Materials Sciences, Acta Metallurgica Slovaca, Journal of Materials Engineering and Performance.

TEKSTBOOK

1997

Practicum in Metal Heat Processing

Radulović Branko, **Radusinović-Asanović Vanja**: "Practicum in Metal Heat Processing", University of Montenegro, MTF, Podgorica, 1997.

MENTORSHIP

2013 – 2017

Master's thesis

Milena Raonic – Master's thesis "*Investigation of influential factors on the choice and suitability of the method for determining the degree of fineness in the system of control of precious metal articles in Montenegro*", defended in 2017 at the Faculty of Mechanical Engineering, University of Montenegro.

2019 – CURRENT

Doctoral thesis

Zorana Sekulic – Doctoral thesis "Influence of transition metals on the structure and properties of nanocomposites based on magnesium hydride."
