

CV - Dr. Dragana Tankosic, Howard University, Department of Physics and Astronomy

EDUCATION

Ph.D. in Physics

University of Alabama in Huntsville, 2010

M.S. in Physics

University of Belgrade, Serbia, and University of Alabama in Huntsville

B.S. in Physics

University of Belgrade, Serbia

ACADEMIC APPOINTMENTS

Probationary Career Status Track Lecturer

Department of Physics and Astronomy, Howard University

August 2025 – Present

Full-Time Lecturer (Temporary)

Department of Physics and Astronomy, Howard University

August 2022 – August 2025

Visiting Full-Time Physics Instructor

Southeastern Louisiana University

August 2021 – May 2022

Adjunct Instructor, Physics and Physical Science

Motlow State Community College, Tennessee

January 2019 – May 2021

Postdoctoral Research Associate

University of Alabama in Huntsville

December 2013 – April 2014

NASA Postdoctoral Program Fellow

September 2011 – December 2013

Research Associate

University Space Research Association (USRA)

2008 – 2011

Graduate Teaching and Research Assistant

University of Alabama in Huntsville

2000 – 2008

Research Associate

Astronomical Observatory, Belgrade, Serbia

1998 – 2000

PROFESSIONAL EXPERIENCE**1. TEACHING EXPERIENCE****Howard University**

Since joining Howard University in 2022, I have taught General Physics I and II (both, algebra and calculus-based courses), General Astronomy, and Observational Astronomy. In Spring 2023, I was appointed as a Fixed-Term Graduate Faculty Member in the Department of Physics and Astronomy, enabling me to contribute to graduate education and mentorship.

Instructor of record for:

- General Physics I and II (Algebra- and Calculus-Based)
- General Astronomy
- Observational Astronomy

Southeastern Louisiana University

- General Physics I
- General Physics Laboratory I
- General Physics Laboratory II

Motlow State Community College

- Non-Calculus Physics
- Calculus-Based Physics
- Survey of Physical Science
- Associated laboratory courses

TEACHING PHILOSOPHY

My teaching combines strong scientific training with extensive research experience to create an engaging, student-centered learning environment.

Research-Informed Instruction

Drawing upon nearly fourteen years of research experience at NASA and the University of Alabama in Huntsville, I integrate real-world scientific investigation into the classroom. Students

gain insight into experimental design, data analysis, laboratory techniques, and the scientific process while learning how physicists approach complex research challenges.

Student-Centered Learning

I adapt my teaching strategies to accommodate students with diverse educational backgrounds and learning styles. My goal is to foster conceptual understanding, critical thinking, and confidence through active engagement and individualized support.

Commitment to Excellence

I continually strive to provide an inclusive, rigorous, and supportive learning environment that encourages academic success and intellectual curiosity.

Collaboration

I value collegiality and believe that effective collaboration with faculty and staff contributes significantly to student success and departmental excellence.

2. RESEARCH EXPERIENCE

NASA Marshall Space Flight Center / University of Alabama in Huntsville

As a Postdoctoral Research Associate, NASA Postdoctoral Fellow, Research Associate, and Graduate Research Assistant, I was a member of the Dusty Plasma Group conducting experimental investigations of the physical and optical properties of lunar, planetary, and interstellar dust.

Major research projects included the following research investigations:

- Photoelectric emission from individual lunar and cosmic dust grains
- Secondary electron emission and dust charging
- Radiation pressure on micron-sized particles
- Rotation and fragmentation of dust grains
- Solar wind charging of lunar dust
- Condensation processes and infrared extinction properties of interstellar dust

Primary responsibilities included:

- Maintenance and operation of an advanced Electrodynamic Balance laboratory
- Operation of vacuum systems, lasers, radiation detectors, and electronic instrumentation
- Design and execution of laboratory experiments
- Data acquisition and analysis
- Preparation of scientific manuscripts and conference presentations

The results of this work were presented at international conferences and published in leading peer-reviewed journals.

Astronomical Observatory, Belgrade

Conducted theoretical calculations of Stark broadening parameters for multiply ionized atomic spectral lines using the Modified Semiempirical Approach. This work contributed to astrophysical plasma diagnostics and stellar atmosphere modeling.

Early Research Experience

During my undergraduate and master's studies in the area of Experimental Physics of Ionized Gases, I participated in both experimental and theoretical investigations of the optovoltaic effect in neon gas.

RESEARCH INTERESTS

- Dusty plasma physics
- Planetary and lunar dust
- Space physics
- Experimental plasma physics
- Laboratory astrophysics
- Radiation–matter interactions
- Physics education

HONORS AND AWARDS

- NASA Postdoctoral Fellowship
- Young Scientist of the Year, Astronomical Observatory, Belgrade

SELECTED PUBLICATIONS

1. Tankosic, D., & Abbas, M. M. (2013). *Study of the Effects of the Electric Field on Charging Measurements of Individual Micron-Size Dust Grains by Secondary Electron Emissions*. 44th Lunar and Planetary Science Conference.
2. Tankosic, D., & Abbas, M. M. (2013). *Experimental Investigation of Charging Properties of Interstellar-Type Silica Dust Grains by Secondary Electron Emissions*. 222nd Meeting of the American Astronomical Society.

3. Tankosic, D., & Abbas, M. M. (2012). *Laboratory Studies of Charging Properties of Dust Grains in Astrophysical and Planetary Environments*. Journal of Physics: Conference Series, **399**, 012024.
4. Abbas, M. M., Tankosic, D., LeClair, A. C., & Spann, J. F. (2012). *Charging of Dust Grains in Astrophysical Environments by Secondary Electron Emissions*. Astrophysical Journal, **756**, 41.
5. Abbas, M. M., Tankosic, D., Craven, P. D., LeClair, A., & Spann, J. F. (2010). *Lunar Dust Grain Charging by Electron Impact*. Astrophysical Journal, **718**, 795–809.
6. Abbas, M. M., Tankosic, D., Craven, P. D., et al. (2007). *Lunar Dust Charging by Photoelectric Emissions*. Planetary and Space Science, **55**, 953–965.
7. Abbas, M. M., Tankosic, D., Craven, P. D., et al. (2006). *Photoelectric Emission Measurements on the Analogs of Individual Cosmic Dust Grains*. Astrophysical Journal, **645**, 324–336.
8. Abbas, M. M., Craven, P. D., Spann, J. F., Tankosic, D., et al. (2004). *Laboratory Experiments on Rotation and Alignment of the Analogs of Interstellar Dust Grains by Radiation*. Astrophysical Journal, **614**, 781–795.
9. Abbas, M. M., Craven, P. D., Spann, J. F., et al. (2003). *Radiation Pressure Measurements on Micron-Size Individual Dust Grains*. Journal of Geophysical Research, **108**, 1229.
10. Tankosic, D., Popovic, L. C., & Dimitrijevic, M. S. (2003). *Electron-Impact Broadening Parameters for Co III Spectral Lines*. Astronomy & Astrophysics, **399**, 795–797.
11. Abbas, M. M., Craven, P. D., Spann, J. F., West, E., Pratico, J., Tankosic, D., & Venturini, C. C. (2002). *Photoemission Experiments for Charge Characteristics of Individual Dust Grains*. Physica Scripta, **T98**, 99–103.
12. Labat, J. M., Bukvic, S., & Tankosic, D. (1999). *Diffusion of Metastable Atoms and Optovoltaic Effect*. Physica Scripta, **60**, 81.

A complete publication list is available upon request.