

CURRICULUM VITAE



Name, academic position and degree:

Dimana Nazarova, Assoc. Prof., PhD

Education:

<i>Institution</i>	Central Laboratory of Optical Storage and Processing of Information – Bulgarian Academy of Sciences, Sofia (Bulgaria)
<i>Date: from (month/year): to</i>	2006-2009
<i>Degree(s) or Diploma(s) obtained:</i>	Doctor (PhD) in Physics

<i>Institution</i>	Faculty of Physics, Sofia University “St. Kliment Ohridski”-Sofia (Bulgaria)
<i>Date: from (month/year): to</i>	1987-1992
<i>Degree(s) or Diploma(s) obtained:</i>	Master degree “Engineering Physics”, specialization: “Applied Optics:

<i>Institution</i>	University of National and World Economy-Sofia (Bulgaria)
<i>Date: from (month/year): to</i>	1994-1999
<i>Degree(s) or Diploma(s) obtained:</i>	Master degree “Finance”

Professional Experience Record:

<i>Date: from (month/year) to (month/year)</i>	19.07.2011- now 2016 – now 2012 - now
<i>Location</i>	Sofia
<i>Company</i>	Institute of Optical Materials and Technologies – Bulgarian Academy of Sciences
<i>Position</i>	Associate professor Head of department: “Optical metrology and holography” Chair of The General Assembly of IOMT
<i>Date: from (month/year) to</i>	01.07.2010-18.07.2011
<i>Location</i>	Sofia
<i>Company</i>	Institute of Optical Materials and Technologies – Bulgarian Academy of Sciences
<i>Position</i>	Assistant professor
<i>Date: from (month/year) to</i>	10.03.2003-30.06.2010
<i>Location</i>	Sofia
<i>Company</i>	Central Laboratory of Optical Storage and Processing of Information (CLOSPI)- BAS
<i>Position</i>	Physicist

Membership of professional bodies: -SPIE, OSA

Present position: Associate Professor and Head of department “Optical metrology and holography”, in Institute of Optical Materials and Technologies – Bulgarian Academy of Sciences;

Key qualifications:

- **polarization holography, multiplexing and holographic optical elements**
- **nanocomposite and hybrid organic/inorganic materials – preparation and characterization**
- **media for optical data storage - photoanisotropic materials, azobenzenes**
- **plasmon polariton resonances**

Total number of scientific publications: 60

From them with impact factor or impact rang: 47

Book chapters: 1

Number of citations of the scientific publications: 81

Participations in international and national conferences: 69

Projects coordinator:

- DN 18/5 „New azo materials and application of their photophysical properties as reversible optical recording devices“, coordinator for IOMT, 2017- 2020.
- DN 08/10 “Reversible polarization holographic recording in anisotropic azopolymer based nanocomposites”, , coordinator, 2016-2018.
- „Advances in Optofluidics: Integration of Optical Control and Photonics with Microfluidics“, coordinator - 2015-2016.
- BG051PO001-3.3.07-0002 „ Student internships“

Projects member:

- BG16 1P0003-1.2.04, number: 1.2.04-0034-C0001, “Development of applied research in IOMT through the development of high-tech optical materials for advanced applications”
- DN 08/13 "Holographic imaging, beam shaping and speckle metrology with computer generated holograms", 2016-2018.
- DTK 02/50, FNI, “Grip phenomena and their impact on longtime reliability of nanosized structures metal electrode / high-k dielectric”
- DFNP-17-57 „Improving the parameters of photoinduced birefringence by introducing nanoparticles of TiO₂ into azopolymers”, 2017-2019.
- DFNI T02/26 , FNI, "New hybrid structures based on photorefractive crystal-liquid crystal and graphene"
- DN 18/8 „Biochip based on new plasma structures and nano-structured bio-recognition elements“
- DN 17/7 „Optical and quantum-electronic elements and devices based on wedge interference structures for laser and optoelectronic techniques, optical communications, metrology and spectral analysis“
- DM 08/01”Surface relief formation study on polarization holographic recording”, 2016-2018.
- TK-09-0002 “Trapping phenomena and their implications on long term reliability of nano-dimensional metallic electrode / high-k dielectric structures”

Contracts with enterprises and of the implemented technological solutions;

- "BIC-Bulgarian Publishing Company" AD for developing a methodology for hologram recording with a increase in natural size.

- "Ballistic Sell" Ltd to develop a methodology for holograms recording of metal and clay artefacts;

Supervision

- 12 students (3bachelor, 2master, 7student internships)
- 2 PhD students (one started in 01.01.2018 and one started in 01.08.2018)

Experience in international projects

COST scientific program MP0604, COST Action P8, COST Action MP1205

Operational Programmes "Development of human resources" and "Development of competitiveness of Bulgarian economy"

„High-Resolution Digital Holography - A Modern Signal Processing Approach project“-
Tampere Finland

„Holographic Technology Demonstrator“ - Tampere Finland

Selected recent publications:

1. A. Georgiev, A. Kostadinov, D. Ivanov, D. Dimov, S. Stoyanov, L. Nedelchev, **D. Nazarova**, D. Yancheva, "Synthesis, Spectroscopic and TD-DFT Quantum Mechanical of Azo-Azomethine Dyes. A Laser Induced Trans-Cis-Trans Photoisomerization Cycle", *Spectrochimica Acta – Part A: Molecular and Biomolecular Spectroscopy*, 192, 263-274, <https://doi.org/10.1016/j.saa.2017.11.016>, (2018), IF = 2,653.
2. A. Stoilova, A. Georgiev, L. Nedelchev, **D. Nazarova**, D. Dimov, "Structure-Property Relationship and Photoinduced Birefringence of the Azo and Azo-Azomethine Dyes Thin Films in PMMA Matrix", *Optical Materials* (accepted to journal), IF = 2.238;
3. N. Berberova, D. Daskalova, V. Strijkova, D. Kostadinova, **D. Nazarova**, L. Nedelchev, E. Stoykova, V. Marinova, C. H. Chi, S. H. Lin, "Polarization holographic recording in thin films of pure azopolymer and azopolymer based hybrid materials", *Optical Materials* 64 (2017), 212-216;), IF = 2.238
4. L. Nedelchev, D. Ivanov, N. Berberova and **D. Nazarova**, "Polarization holographic gratings with high diffraction efficiency recorded in azopolymer PAZO", *Optical and Quantum Electronics*, (2018) 50: 212. <https://doi.org/10.1007/s11082-018-1479-z>; IF:1.055
5. **Nazarova, D. I.**, Nedelchev, L. L., Sharlandjiev, P. S., Dragostinova V. D.. Anisotropic hybrid organic/inorganic (azopolymer/SiO2 NP) materials with enhanced photoinduced birefringence. // *Applied Optics*, 2013, 52, 22, OSA publishing, ISSN:2155-3165, DOI:10.1364/AO.52.000E28, E28-E33. ISI IF:1.78
6. Nedelchev, L., **Nazarova, D.**, Dragostinova, V., Karashanova, D.. Increase of photoinduced birefringence in a new type of anisotropic nanocomposite: azopolymer doped with ZnO nanoparticles. // *Optics Letters*, 2012,37, 13, OPTICAL SOC AMER, ISSN:0146-9592, 2676-2678. ISI IF:3.292
7. Nedelchev, L., **Nazarova, D.**, Dragostinova, V.. Photosensitive organic/inorganic azopolymer based nanocomposite materials with enhanced photoinduced birefringence. // *Journal of photochemistry and photobiology A: Chemistry (JPPA)*, 2013, 261, Elsevier, ISSN:1010-6030, DOI:doi:10.1016/j.jphotochem.2013.04.006, 26-30. ISI IF:2.416
8. Sharlandjiev, P. S., **Nazarova, D. I.** A genetic algorithm approach for evaluation of optical functions of very thin tantalum pentoxide films on Si substrate. // *Physica Scripta*, 2013, T157, IOP Publishing, 2013, ISSN:1402-4896, DOI:10.1088/0031-8949/2013/T157/014048, 014048. ISI IF:1.126

9. Sharlandjiev, P. S., **Nazarova, D. I.** Determination of optical functions of very thin tantalum pentoxide films on platinum substrate by genetic algorithm approach. // *Optical and Quantum Electronics*, 2012, 44, 14, Springer, ISSN:0306-8919, DOI:DOI: 10.1007/s11082-012-9587-7, 673-681. ISI IF:0.987

10. Stoykova, E, **Nazarova, D**, Berberova, N, Gotchev, A. Performance of intensity-based non-normalized pointwise algorithms in dynamic speckle analysis. // *Optics Express*, 23, 19, OSA publishing, 2015, ISSN:1094-4087, DOI:doi: 10.1364/OE.23.025128, 25128-25142. ISI IF:3.488

11. Trainer, K., Wearen, K., **Nazarova, D.**, Naydenova, I., Toal, V.. Optimization of an acrylamide-based photopolymer system for holographic inscription of surface patterns with sub-micron resolution. // *Journal of Optics*, 2010, 12, 12, IOP Publishing Ltd, ISSN:2040-8978, DOI:doi: 10.1088/2040-8978/12/12/124012. 2010., ISI IF:2.06

Book chapter

A. Stoilova, A. Georgiev, **D. Nazarova**, L. Nedelchev, D. Dimov, P. Petkov, „Development of nanostructured materials with CBRN agents sensing properties“, **Book chapter** in NATO Science for Peace and Security Series B: Physics and Biophysics, Chapter 50, pp. 499-507, Springer, Dordrecht, ISBN:978-94-024-1297-0 (print); 978-94-024-1298-7 (online), DOI:10.1007/978-94-024-1298-7_50 (2018)