ASSOC. PROF. SANKA GATEVA-KOSTOVA, PhD

Affiliation

Institute of Electronics, Bulgarian Academy of Sciences, lab. “Laser systems”
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Education

1973-1977r. Sofia High Schol of Mathematics
1977-1982r. Sofia University St. Kl. Ohridski, Faculty of Physics, Department Optics and spectroscopy, MS in Atomic physics
1994r. “Single-frequency helium-neon laser with enhanced pressure” Institute of Electronics, Bulg. Acad. Sc., PhD thessis advisor Assoc. Prof. Dr. Stefka Cartaleva

Main research area

Photonics; High resolution spectroscopy and its applications in metrology, magnetometry, for laser matter interaction, for optical characterization of antirelaxation coatings; Single frequency and frequency stabilized lasers; Laser systems for different applications in metrology, magnetometry, cooling of atoms and ions, monitoring of plasmochemical reactors, laser-matter interaction investigations

Specializations

Poland, Center of Excellence ASPECT at the Institute of Physics of the Polish Academy of Sciences, Warsaw, Prof. Malgorzata Glodz / 1996-2014 1month per year; collaboration since 1996;
Italy, Institute of Optics, Pisa, CNR, 2014; collaboration since 2001;
England, Royal Society/NATO PostDoc Fellowship at National Physical Laboratory, Teddington on: „Development of diode laser systems for spectroscopy of cold ions“ /1 year/, Prof. Patrick Gill;
Austria, Institute of Experimental Physics, Technical University of Graz, Prof. Lorentz Windholz, 1 month, 2003;
Hungary, Institute of solid state physics and optics, Prof. Michay Janossy /2 months, 2001-2004/;
Russia, Novosibirsk, Institute of Thermophysics, SB RAS, acad. V.P. Chebotaev /2 months, 1989-1990/.

Scientific awards

- Young inventor Award of Eureka fondation 1994
- Award of Ministry of Science as conductor of Project F-705, 2002
- Acad. Emil Djkov Award 2002
- Acad. Emil Djkov Award 2003
- Acad. Emil Djkov Award 2009
- Badge "Golden Book" of the Council of European scientific and cultural community for contribution to the development of Bulgarian science, 2013r.
- Member of the research team, awarded in the Competition for excellence of scientists and teams, dedicated to 145 anniversary of BAS in the research field of «Nanosciences, new materials and technologies» 2014

Membership in scientific societies

* SPIE (The International society for optics and photonics)
* Secretary of the Bulgarian section of SPIE /www.spie.org/ (1997-2005r.)
* OSA (The Optical Society)
* Union of Physicists in Bulgaria

Scientific database:

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Selected scientific publications

1. S Gozzini, A Fioretti, A Lucchesini, L Marmugi, C Marinelli, S Tsvetkov, Sanka Gateva, Stefka Cartaleva
   „Tunable and polarization-controlled high-contrast bright and dark coherent resonances in potassium“, *Optics Letters* 42 (15), 2930-2933 (2017)
2. S Tsvetkov, M Taslakov, S Gateva
   „Dynamics of the light-induced atomic desorption at homogeneous illumination“, *Applied Physics* B 123 (3), 92 (2017)
3. K. Nasyrov, S. Gozzini, A. Lucchesini, C. Marinelli, S. Gateva, S. Cartaleva, L. Marmugi
   „Antirelaxation coatings in coherent spectroscopy: Theoretical investigation and experimental test“, Phys. Rev. A 92 (4), 043803 (2015).
4. S. Gateva and G. Todorov, *„Shape of the CPT resonances registered in fluorescence“,* Chapter in "Photodetectors" (ed. S. Gateva), ISBN 978-953-51-0358-5, InTech 417-440 (March 2012).
5. S. Gateva, L. Gurdev, E. Alipieva, E. Taskova, G. Todorov
   „Narrow structure in the coherent population trapping resonances in Rb and Rayleigh scattering“, J. Phys. B: At. Mol. Opt. Phys. 44, 035401 (2011).
6. S.Gozzini, Marmugi, L., Lucchesini, A., Gateva, S., Cartaleva, S., Nasyrov, K.
   „Narrow structure in the coherent population trapping resonance in sodium“, Phys. Rev. 84 (1), 013812 (2011)
7. S. Gateva, L. Petrov, E. Alipieva, G. Todorov, V. Domelunksen, V. Polischuk,
   "Shape of the coherent-population-trapping resonances and high-rank polarization moments", Phys. Rev. A 76(2), 025401 (2007).
8. A. Huss, R. Lammegger, L. Windholz, E. Alipieva, S. Gateva, L. Petrov, E. Taskova, G. Todorov
   "The polarization dependent sensitivity of level-crossing CPT resonances to stray magnetic fields", JOSA B 23 (9), 1729-1736 (2006).
9. S. Gateva, E. Alipieva, E. Taskova *"Power dependence of the coherent-population-trapping* resonances *registered in fluorescence and transmission: Resonance-width narrowing effects"* a/Phys. Rev. A72 (2), 025805 (2005); b/Virtual J. Ultrafast Sc. http://www.vjultrafast.org. Sept.(2005).
10. T.K. Popov, S.V. Gateva
    "Second derivative Langmuir probe measurements of negative oxygen ion concentration taking into account the plasma depletion caused by negative ion sink on the probe surface" *Plasma Sources Sc. and Technol.* 10 614-620 (2001).
11. B. Bieniak, K. Fronc, S. Gateva-Kostova, M. Glódz, V. Grushevsky, J. Klavins, K. Kowalski, A., Rucinska, J. Szonert, "*Excitation transfer between the rubidium 5 ^{2}D fine-structure levels in collisions with ground-state rubidium atoms: Experiment and theory",* Phys. Rev. A62 (2) 022720 (1-5) (2000).
12. P. Taylor, M. Roberts, S.V. Gateva-Kostova, .B.M. Clarke, W.R.C. Rowley, P. Gill,
    "Investigation of the S-D clock transition in a single ytterbium ion"
    Phys. Rev. A56 (4) 2699-1704 (1997).