Sharone Goldring

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Personal Information

Date of birth: 11/01/1970
Place of birth: Israel
Family status: wife + two children

Education

2009 - Doctor of philosophy (PhD) in physics from the Ben Guryon University in the Negev
2001 - Master of Science (M.Sc.) in physics from the Ben Guryon University in the Negev
1998 - Bachelor of Science (B.Sc.) in physics from the Ben Guryon University in the Negev

Professional Experience

Since 1998 to date, conducting research in the field of electro-optics in general, with particular emphasis on solid state lasers and optical waveguides.

Soreq NRC, Yavne 81800, Israel

1998-2001 Research and development of a 2µm laser based on optical pumping of solid state laser materials.

1999-2001 Development of generic optical simulation software to facilitate solid state laser development.

2001-2006 Research and development of rare-earth-material based solid state lasers with emphasis on energy transfer mechanisms, laser dynamics, and heat generating processes.

2006-2019 Research and development of fiber optic lasers and fiber based optical components and waveguides.

Sabbatical

2011-2012 Sabbatical in Sivan Technology Company and in the department of applied physics of the Hebrew University in Jerusalem.

- Research and development in the field of coherent laser combining at Sivan Technology.
- Research in the field of electromagnetic interactions with nanoparticles, including non-formal supervision of Master and PhD students at the Hebrew university, Jerusalem.

2019-2020 Sabbatical in Prof. Yossi Paltiel's labs in the Hebrew University in Jerusalem.

- Research in the field of light interaction with chiral materials

Student Supervision

2015- to day, Co-Supervising a PhD dissertation with Prof. Yuri Feldman, department of mechanical engineering, Ben Guryon University in the Negev, on the subject of numerical simulation of the structure of fused fiber optic components.

2013-2014 Supervising a third year project of a physics student of the Hebrew University in Jerusalem.

2013-2014 Supervising a fourth year project of an optical engineering student of the Jerusalem College of Technology entitled "Design, development and production of a phase stabilizing component based on piezoelectric crystal".

2013-2014 Providing guidance and support to students completing Masters and PhD dissertations in the department of applied physics in the Hebrew university in Jerusalem, as a part of a sabbatical in Professor Yosi Paltiel's group.

2009-2013 Co-Supervising a Masters dissertation with Prof. Adi Arie, department of electrical engineering, Tel-Aviv University, entitled "Acousto-optic Q-switched All-fiber Laser".

2007-2008 Supervising a fourth year project of an optical engineering student of the Jerusalem College of Technology, entitled "Up-conversion in Nd:YVO_4 crystal".

2015 to date, Co-Supervising a PhD. dissertation with Dr. Uri Feldman, department of mechanical engineering, Ben Guryon University, entitled "Numerical Simulations of Structural Fused Fiber Components Based on Immersed Boundary Method".

Publications

Thesis:

1. "Diode Pumped Tm:YAG Lasers", submitted as partial fulfilment of the requirements for the degree of Master of Science in the department of physics, Ben Guryon University in the Negev.
2. "Investigation of heat sources in solid-state laser crystals, and examination of thermal-load reducing pump-schemes", submitted to the Senate of Ben Guryon University in the Negev as partial fulfilment of the requirements for the degree of Doctor of Philosophy.

Refereed manuscripts:

1. R. Lavi, S. Jackel, S. Goldring, Y. Tzuk, E. Lebiush and K. Schepler, "The influence of crystal temperature on the lasing characteristics of Nd:YAG during direct upper lasing level and pump band exitation", rends in Optcs and Photonics on Advanced Solid State Lasers, **50**, 577 (2001)
2. R. Lavi, S. Jackel, A. Tal, E. Lebiush, Y. Tzuk and S. Goldring, "885nm high power diodes end-pumped Nd:YAG laser, Opt. Comm. **195**, 427 (2001)
3. R. Lavi, A. Tal, S. Jackel, E. Lebiush, S. Goldring, and Y. Tzuk, "Heat reduction by direct pumping of Nd:YAG at 885nm", Trends in Optcs and Photonics on Advanced Solid State Lasers, **68**, 441 (2002)

4. Y. Tzuk, A. Tal, S. Goldring, Y. Glick, E. Lebiush, G. Kaufman and R. Lavi, "Diamond cooling of high power diode pumped solid-state lasers", IEEE, Jurnal of Quantum Electronics, **40**, 262 (2004)
5. S. Goldring, R. Lavi, A. Tal, E. Lebiush, Y. Tzuk and S. Jackel, "Characterization of radiative and non-radiative processes in Nd:YAG lasers by comparing direct and band pumping", IEEE, Journal of Quantum Electronics, **40**, 2 (2004)
6. S. Goldring and R. Lavi, "Heat generation following direct pumping of Nd:YVO_4 with and in the absence of stimulated emission", ASSP 2006 Lake Taho, USA
7. S. Goldring and R. Lavi, "Nd:YAG laser pumped at 946nm", Optics Letters, **33**, 669 (2008)
8. S. Goldring, R. Lavi and V. Lupei, "Decay dynamics of excited Nd^{+3} ions in Nd:YVO_4 following week excitation", ", IEEE, Jurnal of Quantum Electronics, **46**, 169(2010)
9. Y. Berg, S. Goldring, S. Pearl, and A. Arie, "Q-switching an all-fiber laser using acousto-optic null coupler", Appl. Phys. B. **111**, 425 (2013)
10. A. Bitman, S. Goldring, I. Moshe, Z. Zalevsky, "Computed tomography using broadband Bessel THz beams and phase-contrast", Optics Letters, **39**, 1925 (2014)
11. Y. Sintov, S. Goldring, S. Pearl, E. Lebiush, B. Sfez, D. Malka and Z. Zalevsky, "A robust all-fiber active Q-switched 1-μm Yb3+ fiber laser", Appl. Phys. B. Published online (2015)
12. Y. Tsur, S. Goldring, E. Galun, A. Katzir " Ground state depletion - A step towards mid-IR lasing of doped silver halides", Journal of Luminescence **175** 113 (2016)
13. A. Spizzichino, S. Goldring and Y. Feldman, "The Immersed Boundary Method: Application to Two-Phase Immiscible Flows" , to be published at Commun. Comput. Phys. (2018)
14. Y. Glick, Y. Shamir, M. Matitya, Y. Sintov, S. Goldring, N. Shafir and S. Pearl, "1.2 kW clad pumped Raman all-passive-fiber laser with brightness enhancement", Optics Letters. 43. (2018).
15. Y. Glick, Y. Shamir, Y. Sintov, S. Goldring and S. Pearl, "Brightness enhancement with Raman fiber lasers and amplifiers using multi-mode or multi-clad fibers" , Optical Fiber Technology **52** (2019)
16. H. Al-Bustami, B. P. Bloom, Amir Ziv, S. Goldring, S. Yochelis, R. Naaman, D. H. Waldeck, and Y. Paltiel, "Optical Multilevel Spin Bit Device Using Chiral Quantum Dots", Nano Lett. (2020) doi.org/10.1021/acs.nanolett.0c03445

Conferences:

1. S. Goldring, M. Winik, R. Lavi, E. Lebiush, Y. Tzuk and S. Rotman, "2μm diode pumped laser", 11th International Meeting on Electro-Optics and Microelectronics in Israel, Tel Aviv, 1999.
2. Y. Tzuk, M. Winik, E. Lebiush, Y. Glick, I. Moshe, S. Jackel, S. Goldring and R. Lavi, "Compact 100 Watt CW diode pumped Nd:YAG rod laser", The XIII Int. Symposium on Gas Flow & Chemical Lasers and High Power Laser Conference, September 2000 (Florence, Italy).
3. S. Goldring, E. Lebiush and R. Lavi, "RTP Q-Switched 2-Micron Tm:YAG Laser", Proceedings of SPIE, 4630, 13 (2002) (Photonic West, San-Jose, USA).
4. R. Lavi, S. Jackel, A. Tal, E. Lebiush, Y. Tzuk and S. Goldring, "Direct pumping of Nd:YAG Lasers", German-Israeli workshop 2001, Hamburg, Germany 2001.
5. S. Goldring, R. Lavi, A. Tal, S. Jackel, E. Lebiush, Y. Tzuk and E. Azoulay, " Direct pumping of four levels lasing materials", Proceedings of SPIE, 4968, 74 (2003) (Photonic West, San-Jose, USA).
6. Y. Tzuk, A. Tal, S. Goldring, Y. Glick, E. Lebiush, G. Kaufman and R. Lavi, "Diamond cooling of high power diode pumped solid-state lasers", Proceedings of SPIE, 4968, 106 (2003) (Photonic West, San-Jose, USA).
7. R. Lavi, S. Goldring, A. Tal, S. Jackel, E. Lebiush and Y. Tzuk, "Closing the gap using direct pumping of neodymium doped crystals", Photonics Europe, Strasbourg, France (April 04).Photonics Europe 2004.
8. Y. Tzuk, A. Tal, S. Goldring, Y. Glick, E. Lebiush and R. Lavi, "Diamond cooling of high power diode pumped Nd:YVO4 and Nd:YAG lasers", Proc. SPIE 5792, 61 (2005) (Defense and Security conference, Orlando (March 2005)).
9. S. Goldring and R. Lavi, "Processes of heat generation in Nd+3 doped lasing materials during pump-lase cycle", invited paper, 6216-15, Defense & Security symposium, SPIE Orlando, USA, April 2006.

10. S. Goldring and R. Lavi, "Influence of lasing on non-radiative transitions in Nd:YVO4", EPS-QEOD Europhoton Conference on Solid-Sate and Fiber Coherent Light Sources, Sep. 2006, Pisa, Italy.
11. S. Goldring and R. Lavi, "Direct pumping of Nd:YAG at 946nm", CLEO/Europe – IQEC June 2007.
12. Y. Berg, S. Goldring, and A. Arie, " Towards acousto-optic Q-switched all-fiber Thulium laser Operating at ~2 micron", OASIS, Tel Aviv, March 10 2011.
13. Y. Berg, S. Goldring, S. Pearl, and A. Arie, "All-fiber Acousto-optic Q-switched Laser", Lasers, Sources, and Related Photonic Devices, OSA, JTh2A.25. 2012.
14. Y. Sintov, S. Goldring, S. Pearl, E. Lebiush, M. Lebendik,, B. Sfez, D. Malka and Z. Zalevsky, "A Robust All-Fiber Q-Switched 1micron Yb3+ Fiber Laser", OASIS, Tel Aviv, March 3 2015.
15. S. Goldring, S. Pearl, Y. Glick, "Temperature measurement of fiber optics by means of thermal induced fluorescence" , OASIS, Tel Aviv, March 4, 2015.
16. A. Spizzichino, S. Goldring, Y. Feldman "A fully pressure-velocity coupled immersed boundary method based on the Lagrange multiplier approach applied on moving and deformable body", The 40th Israel Symposium on Computational Mechanics (ISCM-40), Tel Aviv, April 7, 2016.
17. A. Spizzichino, O. Porat, Y. Feldman, S. Goldring, "Structural evolution of fused optic-fiber components: numerical simulations and experimental study", SPIE Photonics Europe, 2018, Strasbourg, France, May 9 2018.