

Hamid Reza Hamedì

Curriculum Vitae

Name: Hamid Reza

Surname: Hamedì

Date of birth: 11 August 1984

Place of Birth: Kashan, Iran

Nationality: Iran

Married, No children

Country of residence: Republic of Lithuania, EU

Languages: English, Persian, Turkish, Lithuanian

Home address: Laisvės 121(3), Vilnius, Lithuania

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Education

2005-2009: University of Kashan, Iran. BSc in Physics, solid states.

2009-2011: Research Institute for Applied Physics and astronomy, University of Tabriz, Iran. MSc in Physics, Photonic.

2013-2017: Institute of Theoretical Physics and Astronomy, Vilnius University (VU). PhD studies.

Employment

- **2012-2013:** Part time researcher at Research Institute for Applied Physics and astronomy, University of Tabriz, Iran
- **2014-2017:** Junior Researcher at Institute of Theoretical Physics and Astronomy, Vilnius University, Lithuania
- **2017-present:** Researcher at Institute of Theoretical Physics and Astronomy, Vilnius University, Lithuania

Honors and awards

- Among Top 1% of more than 500,000 participants in Iranian Nationwide University Entrance Exam, Jul 2004
- Among Top 3% of participants in Iranian Photonics Graduate Entrance Exam, 2009.
- A Naples University (Italy) research fund grant to visit the SLAM group of Prof. Lorenzo Marrucci (2016)
- Several VU publication rewards

Scientific Visits:

- Oct. 2016-Dec. 2017. A visit of Università di Napoli Federico II, Italy, group of prof. Lorenzo Marrucci, (SLAM group).
- Dec. 2015-Jan. 2016. A visit of University of Tabriz, Iran, group of Prof. Mostafa Sahrai.
- Dec. 2014-Jan. 2015. A visit of University of Tabriz, Iran, group of Prof. Mostafa Sahrai.
- Oct. 2018. A visit of University of Patras, Greece, group of Prof. Emmanuel Paspalakis.
- Nov. 2018. A visit of Technische Universität Darmstadt, group of Prof. Thomas Halfmann.
- Feb. 2019. A visit of University Autonomous Barcelona, Spain, group of Prof. Jordi Mompart.
- Feb. 2019. A visit of University of Patras, Greece, group of Prof. Emmanuel Paspalakis.

Positions of Responsibility

2014-2016 Consultant of a Master student, University of Tabriz, Iran

2012-2015 Supported Iranian students' research activities

Memberships

- Member of Physics society of Iran.

- Member of Optics & Photonics society of Iran.
- Member of scientific Society of Physics Students. University of Kashan (2006- 2007).
- Member of Lithuanian Physics Society

Talks at the Scientific Visits

- University Autonomous Barcelona, “Transfer of optical vortices for coherently prepared media” (Spain, 2019)
- University of Patras, “Exchange of optical vortices for atomic systems” (Greece, 2019)
- Technische Universität Darmstadt, “Azimuthal modulation of electromagnetically induced transparency using structured light” (Germany, Nov. 2018)
- Università di Napoli Federico II, “Electromagnetically induced transparency and slow light” (Naples, Italy, 2016)
- University of Tabriz, “Nonlinear light propagation and slow optical solitons” (Tabriz, Iran, 2015)
- University of Tabriz, “Controllable Optical bistability via atomic coherence” (Tabriz, Iran, 2014)

Expert Activities

Refereeing of the manuscript submitted to the journals indexed in Web of Science

Journal of optical society of America B, Optics Letters, Optics Express, Applied optics, JETP Letters, Laser Physics Letters, Laser Physics.

Presentation at the Conferences:

1. H. Reza Hamed, M. Sahrai. IASBAS. Zanjan, Iran, (2011)
2. H. R. Hamed, M. Sahrai, M. Memarzadeh. Urima. Iran, (2011)
3. H. R. Hamed, Mostafa Sahrai, MeisamMemarzadeh. Urmia. Iran, (2011)
4. H. R. Hamed, M. Sahrai, S. H. Asadpour. Tabriz. Iran, (2012); (Selected talk)
5. H. R. Hamed, M. Sahrai, S. H. Asadpour. Tabriz. Iran, (2012)
6. Hamid Reza Hamed and Gediminas Juzeliunas, 47th conference of the European Group on Atomic Systems (EGAS) July 14-17, Riga, Latvia (2015)
7. Hamid Reza Hamed and Gediminas Juzeliunas, 12th European Conference on Atoms Molecules and Photons (ECAMP12) September 5-9, Frankfurt, Germany (2016)

8. Hamid Reza Hamed, Julius Ruseckas and Gediminas Juzeliunas, 24th Central European Workshop on Quantum Optics (CEWQO) June 26-30, Copenhagen, Denmark (2017)
9. Hamid Reza Hamed and G. Juzeliūnas, August 27-31, Palanga, Lithuania (2014)
10. Hamid Reza Hamed and G. Juzeliūnas, 17th International Conference-School ADVANCED MATERIALS AND TECHNOLOGIES, August 27-31, Palanga, Lithuania (2015)
11. Hamid Reza Hamed and G. Juzeliūnas, Open readings, 59th International Conference for Students of Physics and Natural Sciences, March 15-18, Vilnius, Lithuania (2016)
12. Hamid Reza Hamed and G. Juzeliūnas, 18th International Conference-School, ADVANCED MATERIALS AND TECHNOLOGIES, August 27-31, Palanga, Lithuania (2016)
13. Hamid Reza Hamed and G. Juzeliūnas, Open readings, 60th International Conference for Students of Physics and Natural Sciences, March 14- 17, Vilnius, Lithuania (2017)
14. H. R. Hamed, Julius Ruseckas and G. Juzeliūnas, 26th International Conference on Atomic Physics, ICAP 2018, July 22 – 27, Barcelona, Spain (2018)
15. H. R. Hamed, Julius Ruseckas and G. Juzeliūnas, Humboldt Kolleg, Controlling quantum matter: From ultracold atoms to solids, July 29 - August 2, Vilnius, Lithuania (2018)
16. H.R.Hamed, V. Kudriašov, J. Ruseckas, G. Juzeliūnas, 26th Central European Workshop on Quantum Optics, Paderborn University, Germany, June 3–7 (2019)
17. H.R.Hamed, J. Ruseckas, E. Paspalakis, G. Juzeliūnas, 21th International Conference-School ADVANCED MATERIALS AND TECHNOLOGIES, August 19-23, Palanga, Lithuania (2019)

Publications and their citations

(According to google scholar):

Total number citations: 750

h-index: 17.

List of all scientific publications by Hamid Reza Hamed

1. Hamid Reza Hamed, Emmanuel Paspalakis, Giedrius Žlabys, Gediminas Juzeliūnas, and Julius Ruseckas, Complete energy conversion between light beams carrying orbital angular momentum using coherent population trapping for a coherently driven double- Λ atom-light-coupling scheme, Phys. Rev. A 100, 023811 (2019)
2. Hamid Reza Hamed, Julius Ruseckas, Emmanuel Paspalakis, and Gediminas Juzeliūnas, Transfer of optical vortices in coherently prepared media, Phys. Rev. A **99**, 033812(2019)

3. H. R. Hamed, M. Jafari, and V. Kudriasov, Soliton slow light for closed loop quantum systems, *Phys. Scr.* **94**, 025103 (2019)
4. Hamid Reza Hamed, Viaceslav Kudriasov, Julius Ruseckas, Gediminas Juzeliūnas, Azimuthal modulation of electromagnetically induced transparency using structured light, *Optics Express* **26**, 28249-28262 (2018)
5. Hamid Reza Hamed, Julius Ruseckas, Gediminas Juzeliūnas, Exchange of optical vortices using an electromagnetically induced transparency based four wave mixing setup. *Phys. Rev. A* **98**, 013840 (2018)
6. Seyyed Hossein Asadpour, Hamid Reza Hamed, and Mahmoud Jafari, Enhancement of Goos–Hänchen shift due to a Rydberg state, *Applied Optics* **57**, 4013-4019 (2018)
7. H. R. Hamed, M. Sahrai, H. Khoshshima, Atom Localization Using a Rydberg State, *Physics of Wave Phenomena*, **26**, 47–55 (2018)
8. H. R. Hamed, Mostafa Sahrai, Habib Khoshshima, and Gediminas Juzeliūnas, “Optical bistability forming due to a Rydberg state “. *J. Opt. Soc. Am. B* **34**, 1923-1929 (2017)
9. H. R. Hamed, J Ruseckas and G Juzeliūnas, “Electromagnetically induced transparency and nonlinear pulse propagation in a combined tripod and Λ atom-light coupling scheme”. *J. Phys. B: At. Mol. Opt. Phys.* **50** 185401 (2017)
10. H. R. Hamed, Mostafa Sahrai, “Temporal evolutional absorption behaviors of graphene under Landau quantization”. *Physica E: Low-dimensional Systems and Nanostructures*, **86**, 10–16 (2017).
11. A. Raheli, H. R. Hamed, M. Sahrai, An enhanced refractive index with suppressed absorption in a graphene nanostructure under external magnetic field, *Physics of Wave Phenomena*, **25**, 107–113 (2017)
12. H. R. Hamed and G. Juzeliūnas. “Phase-sensitive atom localization for closed-loop quantum systems”. *Phys. Rev. A* **94**, 013842 (2016).
13. H. R. Hamed, Ali Hamrah Gharamaleki, and Mostafa Sahrai, “Colossal Kerr nonlinearity based on electromagnetically induced transparency in a five-level double-ladder atomic system.”. *Applied Optics*, **55**, 5892-5899 (2016)
14. H R Hamed, M. R. Mehmannaavaz, “Phase control of three-dimensional atom localization in a four-level atomic system in Lambda configuration “. *J. Opt. Soc. Am. B*, **33**, 41-45 (2016).
15. H. R. Hamed, “Storage and retrieval of light pulse propagating in quadruple quantum dot molecules “. *J. Opt. Soc. Am. B* **33**. 151-157 (2016).
16. Ali Raheli, H R Hamed and M Sahrai. “The optical properties of a weak probe field in a graphene ensemble under Raman excitation”. *Laser Phys. Lett.* **13**, 065202 (2016)

17. Ali Raheli, H R Hamed, M Sahrai and R. A. Sabet. "Coherent control of some optical properties in a system of molecular magnets". *Laser Phys. Lett.* **13**, 015203 (2016)
18. H. R. Hamed, "Pulse propagation and optically controllable switch in coupled semiconductor-double-quantum-dot nanostructures ". *J. Appl. Phys.* **119**, 183104 (2016)
19. H. R. Hamed and S. H. Asadpour. *J. Appl. Phys.* "Realization of optical bistability and multistability in Landau-quantized graphene". **117**, 183101 (2015).
20. Ali Golestani, H.R. Hamed, Ahad Darkhosh, "Size effects in quantum well nanostructures on propagation of light pulse". *Physica B* **456**, 129–133 (2015).
21. Ali Raheli, H. R. Hamed and M Sahrai, "2D spatial distribution of probe absorption in a triple semiconductor quantum well nanostructure". *Laser Phys. Lett.* **12**, 105201 (2015).
22. Ali Raheli, H. R. Hamed and M Sahrai, "Atom localization in 2D for five-level atomic schemes in X-configuration". *Laser Phys.* **25**, 095202 (2015).
23. S. H. Asadpour, H. R. Hamed and H. Rahimpour Soleimani. "Slow light propagation and bistable switching in a graphene under an external magnetic field". *Laser Phys. Lett.* **12**, 045202 (2015).
24. A. Raheli, H. Afshari, H. R. Hamed, "Coherent control of optical bistability and multistability in a triple semiconductor quantum well nanostructure". *JETP Letters*, **102**, 496–502 (2015)
25. Ali Raheli, M. Sahrai, H. R. Hamed. "Atom position measurement in a four-level Lambda-shaped scheme with twofold lower-levels". *Opt. Quant Electronics* **47**, 3221-3236 (2015).
26. S. H. Asadpour, H. R. Hamed, H. Rahimpour Soleimani. "Role of incoherent pumping field on absorption–dispersion properties of probe pulse in a graphene nanostructure under external magnetic field" *Physica E: Low-dimensional Systems and Nanostructures* **71**, 123–129 (2015).
27. H. R. Hamed, M. R. Mehmnavaz. "Switching feature of EIT-based slow light giant phase-sensitive Kerr nonlinearity in a semiconductor quantum well" *Physica E: Low-dimensional Systems and Nanostructures* **66**, 309–316 (2015).
28. H. R. Hamed and G. Juzeliūnas. "Phase-sensitive Kerr nonlinearity for closed-loop quantum systems". *Phys. Rev. A* **91**, 053823, (2015).
29. H. R. Hamed, "Perfect Precision Detecting Probability Of An Atom Via Sgc Mechanism". *Int. J. Theor. Phys.* **54**, 2012-2021 (2015)
30. H. R. Hamed, Ali Khaledi-Nasab, Ali Raheli, M. Sahrai, "Coherent control of optical bistability and multistability via double dark resonances (DDR)". *Opt. Commun* **312**, 117–122 (2014).
31. S. Feili , H. R. Hamed, "Large Kerr nonlinearity in a crystal of molecular magnets system". *Opt. Commun* **315**, 116–121 (2014).
32. H. R. Hamed, "Optical bistability and multistability via magnetic field intensities in a solid ". *Appl. Opt.* **53**, 5391-5397 (2014).

33. H. R. Hamed, Arash Radmehr, and M. Sahrai, "Manipulation of Goos-Hänchen shifts in the atomic configuration of mercury via interacting dark-state resonances". *Phys. Rev. A* **90**, 053836 (2014).
34. H. R. Hamed, "Ultra-slow propagation of light located in ultra-narrow transparency windows through four quantum dot molecules". *Laser Phys. Lett.* **11**, 085201 (2014).
35. H. R. Hamed. "Inter-dot tunneling control of optical bistability in triple quantum dot molecules". *Physica B* **449**, 5–9 (2014).
36. H. R. Hamed. "Optical bistability through the cavity effect in a four-level open atomic medium". *JETP Letters*, **100**, 299-305 (2014).
37. H. R. Hamed, S. H. Asadpour, M. Sahrai, "Giant Kerr nonlinearity in a four-level atomic medium". *Optik*, **124**, 366- 370 (2013).
38. S. H. Asadpour, H. R. Hamed, "Giant Kerr nonlinearity in an n-doped semiconductor quantum well". *Opt. Quant Electronics.* **45**, 11-20 (2013).
39. H. R. Hamed, S. H. Asadpour, M. Sahrai, B. Arzhang, D. Taherkhani, "Optical bistability and multi-stability in a four-level atomic scheme". *Opt. Quant Electronics.* **45**, 295–306 (2013).
40. H. R. Hamed, M. Sahrai, S. H. Asadpour, "Effect of Quantum Interference from Incoherent Pumping Field and Spontaneous Emission on Controlling the Optical Bistability and Multi-Stability". *Commun Theor Phys*, **59**, 199-204 (2013).
41. B. Arzhang, M. Sahrai, D. Taherkhani, H. R. Hamed, "Coherent control of quantum entropy via quantum interference in a four-level N-type atomic system". *Optik* **124**, 3861– 3865 (2013).
42. H. R. Hamed, Ali Khaledi_Nasab, and Ali Raheli, "Kerr nonlinearity and EIT in a double Lambda type atomic system". *Optics and Spectroscopy*, **115**, 544–55 (2013).
43. H.R. Hamed, Gediminas Juzeliūnas, A.Raheli, M.Sahrai. "High refractive index and lasing without inversion in an open four-level atomic system". *Opt. Commun* **311**, 261–265 (2013).
44. M. Sahrai, H.R. Hamed, M. Memarzadeh, "Kerr nonlinearity and optical multi-stability in a four-level Y-type atomic system". *J Mod Opt*, **59**, 980-987 (2012).
45. S. H. Asadpour, M. Sahrai, A. Soltani, H. R. Hamed, "Enhanced Kerr nonlinearity via quantum interference from spontaneous emission". *Phys. Lett. A*, **376**, 147–152 (2012).
46. S. H. Asadpour, H. R. Hamed, M. Sahrai, "Phase control of Kerr nonlinearity due to quantum interference in a four-level N-type atomic system". *J. Lumin*, **132**, 2188–2193 (2012).
47. M. Sahrai, R. Nasehi, M. Memarzadeh, H. Hamed, J. B. Poursamad, "Controlling the probe-absorption and -dispersion via quantum interference from incoherent pumping field in a four-level lambda-type system". *European Physical Journal D*, **65**, 571-579 (2011).

48. S. H. Asadpour, H. R. Hamed, A. Eslami-Majd, M. Sahrai, "Enhanced Kerr nonlinearity in a tunnel-coupled double quantum wells". *Physica E Low-dimensional Systems and Nanostructures*, **44**, 464-469 (2011).

submissions

1. H. R. Hamed, V. Yannopapas, and E. Paspalakis, Control of nonlinear optical phenomena and spatially structured optical effects in a four-level quantum system near a plasmonic nanostructure, Submitted to *Phys. Rev. A*.