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Google Scholar: <https://scholar.google.com/citations?user=qFZTKZIAAAAJ&hl=en>

Education:

PH.D. | 2014 | AMIRKABIR UNIVERSITY OF TECHNOLOGY (TEHRAN POLYTECHNIC), TEHRAN, IRAN

Nuclear Engineering, (Proton Acceleration in Ultra-Short and Ultra-Intense Laser Pulse Interaction with Plasma), PHYSICS AND ENERGY ENGINEERING DEPARTMENT

M.SC. | 2006 | URMIA UNIVERSITY, URMIA, IRAN, Atomic and Molecular Physics, (Direct Electron Acceleration in Stochastic Laser Field), PHYSICS DEPARTMENT

B.SC. | 2003 | TABRIZ UNIVERSITY, TABRIZ, IRAN

PHYSICS (Atomic and Molecular Physics),
DEPARTMENT OF PHYSICS

Professional Experiences:

Assistant Professor, March 2017 -Present, Tarbiat Modares University, Tehran, Iran

Parental Leave, Dec. 2015-March. 2017

Research Assistant, Sept. 2009 – Sept. 2015, Amirkabir University of Technology

Guest Student, March 2012-March 2013, Department of Physics, Atomic Physics Division, LTH, Lund University, Lund, Sweden

Graduate Research Assistant, June 2005-2011: Sharif University of technology, Physics Department, Researcher works with Professor Rasoul Sadighi-Bonabi- Tehran- Iran.

Research Assistant, December 2007-2014 (Online Collaboration): Research works with Professor Heinrich Hora from School of Physics of the University of New South Wales.

Research Interests:

- Perovskite solar cells, LEDs, Lasers
- Nanoplasmonic cavity
- Light propagation and coherent light generation in disordered and nonlinear media
- Light matter interactions

Teaching Experiences:

University of Tarbiat Modares, Tehran, Iran since 2017

- Advanced Laser
- Fundamentals of Photovoltaics (Spring 2025)
- Laser Spectroscopy (Master course)
- Light matter interaction (PhD courses),
- Photonics (master)
- Optoelectronics (PhD course)

Selected international Conferences and workshops:

- P.Forozi-Sowmeeh , M. Zohor-Fazeli , **E.Yazdani**, “Impact of Ion Migration on the Time-Transient Performance of Perovskite LEDs”, International Conference on Hybrid and Organic Photovoltaics (HOPV22), València, Spain, 2022 May 19th - 25th (Virtual)
- **E.Yazdani**, Quantum-confined Lead Halide Perovskite Nanostructures for Optoelectronics Applications, joint workshop, Berlin-Tehran on Hybrid system for optics, electronics and photonics, Berlin, Germany, October 8–11, 2018.
- **E.Yazdani**, participate in the Training School on Laser Applications for Biology and Biomolecular Systems: an authentic hands-on experience, Coimbra, Portugal, 3-7 July 2017.
- **E. Yazdani et al.** , High current ion beam generation by nonlinear ponderomotive force of high intensity uv laser, 5th international conference on the frontiers of plasma physics and technology 18-22 April 2011, Singapore, Republic of Singapore.
- **E.Yazdani et al**, Electron trapping and field propagation in laser-plasma interaction with density transition.*Plasma Science, 2008. ICOPS 2008. IEEE 35th International Conference.*
- **E.Yazdani et al**, Nonlinear force accelerated plasma blocks with inhomogeneous Rayleigh density profile *XXX ECLIM 30th European Conference on Laser Interaction with Matter Darmstadt, Germany, August 31 - September 5, 2008 and GSI Report (2009)*
- **E.Yazdani**, Laser Generation of Directed Plasma Blocks Accelerated By Nonlinear Forces 4th International conference on the frontiers of plasma physics and technology (6-10 April, 2009, Kathmandu, Nepal)

Selected Journal Papers

- F.Sahranavard, M. Zoghi, M.Minbashi, **E.Yazdani**, Random Textured Interfaces for Efficiency Enhancement of Perovskite Solar Cells (Under Review, 2025)
- M.Yarahmadi, **E.Yazdani**, M.K.Moravvej-Farshi, Comprehensive Numerical Study of Perovskite Light Emitting Diode Efficiency (submitted , 2025)
- P. forzi, **E. Yazdani** ,2024, Role of Cation-mediated Recombination on the Hysteresis Behavior of Perovskite Light-emittingDiodes, *Journal of Physics and Chemistry of Solids* 185, 111777. Doi: <https://doi.org/10.1016/j.jpcs.2023.111777>
- P.Frozi, M.Fazeli, **E.yazdani** , 2023, Understanding the influence of cation and anion migration on perovskite light-emitting diodes viatime transient response , *Scientific Reports* 13 (1), 15643. Doi:<https://doi.org/10.1038/s41598-023-42933-1>
- M Minbashi, **E Yazdani**, 2023, Perovskite interfaces to contacts ionic flux effect on hysteresis behavior in Perovskite solar cells, *Physical Chemistry Chemical Physics* 25 (6), 5146-5155. Doi: <https://doi.org/10.1039/D2CP04714D>
- P. Forozi-Sowmeeh , M. Zohorfazeli , M. Maleki, M. Minbashi ,E. Yazdani, 2022, Studying the Role of Ion Migration on Perovskite Light-Emitting Diodes by Steady-State approach, *AUT journal of electrical engineering* 54, 377-386. Doi:[10.22060/eej.2022.21178.5462](https://doi.org/10.22060/eej.2022.21178.5462)
- Mehran Minbashi, Elnaz Yazdani, 2022, Comprehensive study of anomalous hysteresis behavior in perovskite-based solar cells; *Scientific reports* 12, 14916. doi:(<https://doi.org/10.1038/s41598-022-19194-5>)
- A.Nahani, S.Miri, **E. Yazdani**, 2022, Confining halide perovskite crystals CH₃NH₃PbBr₃ in porous aluminum oxide thin film, *Iranian Journal of Physics Research*; 22, 1. Doi:<https://doi.org/10.47176/ijpr.22.1.41229>
- M. Minbashi, **E. Yazdani**,2022, Effect of Cation and anion migration toward contacts on Perovskite solar cell performance; *Progress in Physics of Applied Material*,2,2. Doi: [10.22075/ppam.2022.29018.1042](https://doi.org/10.22075/ppam.2022.29018.1042)
- E Irani, **E Yazdani**, A Bayat, 2022, Enhancement and tuning of optical properties of CdTe/CdS core/shell quantum dots by tuningshell thickness, *Optik* 249, 168198. doi:<https://doi.org/10.1016/j.ijleo.2021.168198>
- MS. Hosseini, **E. Yazdani**, E Irani, B Sajad, F Mehradnia, S Bazire, A Bayat, 2021, Mode-controlled random laser assisted by stimulated Raman scattering, *Optics Communications* 500, 127338. doi:<https://doi.org/10.1016/j.optcom.2021.127338>
- MS. Hosseini, **E .Yazdani**, B. Sajad,2021, Narrow-band random Raman lasing from Rhodamine 6G assisted by cascaded stimulated Ramanscattering effect , *Scientific Reports* ,11, 21747. doi:<https://doi.org/10.1038/s41598-021-01354-8>
- R. Abazari, **E. Yazdani**, M. Nadafan, A. M.Kirillov, J. Gao, A. M. Z. Slawin, 2021, Third-Order Nonlinear Optical Behavior of an Amide-Tricarboxylate Zinc(II) Metal–Organic Framework with Two-Fold 3D+3D Interpenetration, *Inorg. Chem* 60 (3), 9700–9708. doi:<https://doi.org/10.1021/acs.inorgchem.1c00997>

- MS. Hosseini, **E.Yazdani**, B. Sajad, 2021, Random Raman laser of Rhodamine 6G dye containing ZnO nanospheres, *Journal of Luminescence*, 232,117863. doi:<https://doi.org/10.1016/j.jlumin.2020.117863>
- M Minbashi, A Ghobadi, E Yazdani, AA Kordbacheh, A Hajjiah, 2020, Efficiency enhancement of CZTSSe solar cells via screening the absorber layer by examining of different possible defects, *Scientific Reports* 10 ,21813. doi: <https://doi.org/10.1038/s41598-020-75686-2>
- S.Rezaei, **E.Yazdani**, M.Jafari , 2020, Parametric study of ultra-intense laser interaction with uniform and nano-porous near-criticalplasmas, *AIP Advances* 10, 055210, doi:<https://doi.org/10.1063/1.5131860>
- SR Ardekani, ASR Aghdam, M Nazari, A Bayat, **E Yazdani**, 2019, A comprehensive review on ultrasonic spray pyrolysis technique: Mechanism, main parametersand applications in condensed matter, *Journal of Analytical and Applied Pyrolysis* 141, 104631. doi:<https://doi.org/10.1016/j.jaap.2019.104631>
- S Rezaei, MJ Jafari, E Yazdani, 2022, Field ionization effect on the proton acceleration scheme via high intensity laser interaction with target at different pulse durations, *Journal of Nuclear Science and Technology (JONSAT)* 43(4), 91-99. Doi:<https://doi.org/10.24200/nst.2022.1471>
- MJ Jafari, E Yazdani, S Rezaei, 2020, Target Nano-particles size effect on the laser proton acceleration in the TNSA mechanism, *Journal of Nuclear Science and Technology* 91(1), 74-80. Doi: <https://doi.org/10.24200/nst.2020.1097>
- R Goodarzi, E Yazdani, 2020, Studying and surveying proton acceleration in high power laser interaction with foam targets, *Journal of Nuclear Science and Technology* 93(3),63-72.doi: <https://doi.org/10.24200/nst.2020.1142>
- E Yazdani, 2017, Proton Acceleration Enhancement in Frequency Chirped Laser Pulse Interaction with Plasma, *Journal of Nuclear Science and Technology (JONSAT)* 38(3), 87-94.doi: [20.1001.1.17351871.1396.38.3.9.1](https://doi.org/10.1001.1.17351871.1396.38.3.9.1)
- E.Khalilzadeh, J Yazdanpanah, J Jahanpanah, A Chakhmachi, **E Yazdani**, 2015, *Physics of Plasmas* 22 (11), 113115. doi: <https://doi.org/10.1063/1.4936276>
- SZare, **E Yazdani**, R Sadighi-Bonabi, A Anvari, H Hora, 2015, The effect of quantum correction on plasma electron heating in ultraviolet laser interaction, *Journal of Applied Physics* 117, 143303. doi:<https://doi.org/10.1063/1.4916373>
- H Vosoughian, Z Riazi, H Afarideh, **E Yazdani**, 2015, Enhancement of proton acceleration by frequency-chirped laser pulse in radiation pressuremechanism, *Physics of Plasmas* 22, 073110. doi:<https://doi.org/10.1063/1.4926817>
- S.Zare, S Rezaee, **E Yazdani**, A Anvari, R Sadighi-Bonabi, 2015, Relativistic Gaussian laser beam self-focusing in collisional quantum plasmas, *Laser and Particle Beams*, 33 (3), 397-403. doi: <https://doi.org/10.1017/S0263034615000063>
- S Zare, **E Yazdani**, S Rezaee, A Anvari, R.Sadighi-Bonabi, 2015, Relativistic self-focusing of intense laser beam in thermal collisionless quantum plasma with ramped density profile,*Physical Review Special Topics-Accelerators and Beams* 18. 041301. doi:<https://doi.org/10.1103/PhysRevSTAB.18.041301>
- **E.Yazdani**, R. Sadighi-bonabi, H. Afarideh, J. Yazdanpanah, AND H. Hora, 2014, Enhanced laser ion acceleration with a multi-layer foam target assembly, *Laser and Particle Beams*, 32 (4), 509-515. doi:<https://doi.org/10.1017/S0263034614000342>
- P Zobdeh, R Sadighi-Bonabi, H Afarideh, **E Yazdani**, R.Rezaei, 2008, Using the steepened

plasma profile and wave breaking threshold in laser-plasma interaction, *Contributions to Plasma Physics* 48 (8), 555-569. doi: <https://doi.org/10.1002/ctpp.200810088>

- **E Yazdani**, R. Sadighi-Bonabi, H Afarideh, Z Riazi, H Hora, 2014, Electron heating enhancement by frequency-chirped laser pulses, *Journal of Applied Physics* 116 (10), 103302. doi: <https://doi.org/10.1063/1.4894777>
- H Hora, R Sadighi-Bonabi, **E Yazdani**, H Afarideh, F Nafari, M.ghorannevis, 2012, Effect of quantum correction on the acceleration and delayed heating of plasma blocks, *Physical Review E* 85 (3), 036404. doi: <https://doi.org/10.1103/PhysRevE.85.036404>
- R Sadighi-Bonabi, **E Yazdani**, Y Cang, H Hora, 2010, Dielectric magnifying of plasma blocks at nonlinear force acceleration with delayed electron heating, *Physics of Plasmas*; 17 (11), 113108. doi: <https://doi.org/10.1063/1.3497009>
- R Sadighi-Bonabi, H Hora, Z Riazi, **E Yazdani**, SK Sadighi, 2010, Generation of plasma blocks accelerated by nonlinear forces from ultraviolet KrF laser pulses for fast ignition, *Laser and Particle Beams*, 28, 101-107. doi: <https://doi.org/10.1017/S0263034609990656>
- R Sadighi-Bonabi, **E Yazdani**, M Habibi, E Lotfi, 2010, Comment on "Plasma density ramp for relativistic self-focusing of an intense", *JOSA B* 27 (9), 1731-1734. doi: <https://doi.org/10.1364/JOSAB.27.001731>
- R Sadighi-Bonabi, M Habibi, **E Yazdani**, 2009, Improving the relativistic self-focusing of intense laser beam in plasma using density transition. *Physics of Plasmas* 16 (8), 083105. doi: <https://doi.org/10.1063/1.3202694>
- **E Yazdani**, Y Cang, R Sadighi-Bonabi, H Hora, F Osman, 2009, Layers from initial Rayleigh density profiles by directed nonlinear force driven plasma blocks for alternative fast ignition. *Laser and Particle Beams* 27 (01), 149-156. doi: <https://doi.org/10.1017/S0263034609000214>

Languages:

- Persian (Native)
- Azari(Native)
- Turkish (Native)
- English (fluent)
- German(A1)

Computer skills:

- Programming Languages: Fortran, Python.
- Mathematical Softwares: Matlab.
- Technical Softwares: Comsol
- Graphical Software:Origin.
- Other Softwares: Microsoft office, Latex, onenote
- Simulation Codes: Multi dimension Particle-In-Cell codes (LPIC++, EMIS, Mandor,Piccante,...), Fluid codes (two fluid code, Multi fs code.

Supervision of junior researchers (2017-2025)

PhD THESES:

- Stability Enhancement of Perovskite solar Cells Using Functionalized Polymers in the Perovskite Film (2026, In progress)
- Crystal defect passivation in perovskite solar cells with aim of device hysteresis reduction. (2025, In progress)
- Ion Migration Effect on the Operation and Efficiency of Perovskite-based Light-emitting Diodes (2025- In progress)
- Simulation and performance analysis of perovskite solar cells by considering the effect of ion migration (Feb.2019- Feb. 2023)

MASTER THESES:

- The role of additives and surface Passivation on the performance of perovskite solar cells (in progress, 2025)
- Design and fabrication of polymer coating for enhanced stability of perovskite solar cells against the environmental impacts (In progress, 2026)
- Improving the crystallinity and morphology of perovskite film using functionalized polymer in perovskite solar cell (In progress, 2026)
- Effect of defect performance of perovskite-based light emitting diodes (Advisor, 2023)
- Studying of hysteresis behavior in Perovskite solar cell under indoor light radiation (2024)
- Performance improvement of perovskite based solar cell by structural engineering of absorber layer (2023)
- Investigation of nonlinear optical properties of materials with near-zero electrical conductivity-doped CdTe (Advisor ,2023)
- Random Raman laser of rhodamine 6G with morphology effect of ZnO microstructures (Advisor, 2022)
- The Impact of Ion Migration on the Operation of Perovskite Light-emitting Diodes (2022)
- Ion Migration Effect on the Operation and Efficiency of Perovskite-based Light- emitting Diodes (2022)
- Proton acceleration in ultra-short ultra-intense laser interaction with near critical plasma density (2021)
- Spectral properties of confined halide perovskite crystals on porous Al₂O₃ substrates (2021)
- Optical characteristic of amplified light in halide perovskites thin films (2017)
- Spectral properties of amplified light in an organic dye solution based on ZnO nanoparticle (2017)