

# Curriculum Vitae

Personal Data

Research Interests

Current Positions

Education

Awards and Honors

Computer and Programming Skills

Teaching Experiences

Activities

Postdocs and Students

Patents

Publications-Journals

Publications-Proceedings-International

Publications-Proceedings-National

Talks

Schools and Conferences Attended

Further Activities

Referees

## ↑ Personal Data:

- **Surname:** Moradi Koshkabadi
- **Name:** Ali-Reza
- **Date and Place of Birth:** August 27, 1977; Zanzan, Iran
- **Nationality:** Iranian
- **Email:** [moradika@iasbs.ac.ir](mailto:moradika@iasbs.ac.ir), [ar\\_moradi@yahoo.com](mailto:ar_moradi@yahoo.com)
- **Web:** [www.iasbs.ac.ir/~moradika](http://www.iasbs.ac.ir/~moradika)
- **Address:** Multi-dimensional Imaging and Detection Laboratory  
Department of Physics, Institute for Advanced Studies in Basic Sciences  
PO Box 45137-66731, Zanzan, Iran
- **Tel:** +98 24 3313 2122 (Office)  
+98 24 3313 2181 (Lab.)
- **Fax:** +98 24 3313 2104

## ↑ Research Interests:

- Multi-dimensional Imaging and Microscopies, Biophotonics, Optical and Acoustical Manipulation, and Diffractive Optics and their Applications in Soft Matter, Biology, Fluidics, Metallurgy, Mechanical Engineering, Chemistry.

## ↑ **Current Positions:**

- Faculty member, Department of Physics, Institute for Advanced Studies in Basic sciences (IASBS), Zanjan, Iran
- Long term visitor, School of Nano Science, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran

## ↑ **Education:**

- Ph.D. in Optics, September 2003 - March 2009, Institute for Advanced Studies in Basic sciences (IASBS), Zanjan, Iran  
*Supervisors: Prof. D. Cojoc and Prof. M. T. Tavassoli*  
*Thesis title: Diffractive Optical Elements Applications in Optical Micromanipulation*
- M.Sc. in Optics, 2001-2003, Institute for Advanced Studies in Basic sciences (IASBS), Zanjan, Iran  
*Supervisor: Prof. M. T. Tavassoli*  
*Thesis title: Diffraction Theory of Degenerate Four Wave Mixing*
- BSc in Physics, 1996-2001, Sharif University of Technology, Tehran, Iran
- High School Diploma, 1996, Beheshti High School, under the Supervision of NODET (National Organization for Development of Exceptional Talents), Zanjan, Iran

## ↑ **Awards and Honors:**

- The Abdus Salam TRIL (Training and Research in Italian Laboratories) award, 2021
- Junior associateship award, The Abdus Salam Center for Theoretical Physics, 2012-2018
- The Abdus Salam TRIL (Training and Research in Italian Laboratories) award, 2007
- STEP fellow (ICTP/IAEA Sandwich Training Educational Program) of The Abdus Salam ICTP, 2003-2006
- Top student (1st rank) Graduated, Institute for advanced Studies in Basic Sciences, Zanjan, Iran, 2003

## ↑ **Computer and Programming Skills:**

- Matlab, Mathematica, Maple, Latex, Adobe DreamWeaver, Microsoft Office, Google SketchUp

## ↑ Teaching Experiences:

- **Advanced Optics and Photonics 2** to continuous Ph.D. students, Institute Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran
- **Advanced Optics and Photonics 1** to continuous Ph.D. students, Institute Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran
- **3D imaging** to M.Sc. and Ph.D. students, Institute Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran
- **Seminar Course** to M.Sc. and Ph.D. students, Institute Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran
- **Fourier Optics** to M.Sc. and Ph.D. students, Institute Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran
- **Microscopy**, to M.Sc. and Ph.D. students, Institute Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran
- **Biophotonics**, to M.Sc. and Ph.D. students, Institute Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran
- **Modern Physics Lab**, to continuous Ph.D. students, Institute Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran
- **3D Super-resolved Imaging**, IASBS Winter-school, Institute Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran
- **Nanostructures Analysis Methods**, to Nano-biomedicine Ph.D. students, Zanjan University of Medical Sciences, Zanjan, Iran
- **Advanced Optics**, to Physics Ph.D., University of Zanjan, Zanjan, Iran
- **Advanced Optics Lab**. to Physics M.Sc. students, University of Zanjan, Zanjan, Iran
- **Fourier Optics** to Physics M.Sc. students, University of Zanjan, Zanjan, Iran
- **Applied Optics** to Physics B.Sc. students, University of Zanjan, Zanjan, Iran
- **Optics Lab**. to Physics B.Sc. students, University of Zanjan, Zanjan, Iran
- **Optics** to Physics B.Sc. students, University of Zanjan, Zanjan, Iran
- **General Physics 2** to Chemical Engineering B.Sc. students, University of Zanjan, Zanjan, Iran
- **General Physics 1** to Earth Science, Electrical Engineering, and Mechanical Engineering B.Sc. students, University of Zanjan, Zanjan, Iran
- **Optics of Surveillance and Security Camera Systems** to security technical staff, Ministry of Energy, Tehran, Iran

- **Optical Systems for Security Aims** to security technical staff, Ministry of Energy, Tehran, Iran
- **Mathematical Physics** to Physics B.Sc. students, Payam Noor University, Zanjan, Iran
- **Physics** to preparing talented high school students for National Physics Olympiad, Beheshti High School, Zanjan, Iran

## ↑ **Activities:**

- Member of the International Affair Committee, Physics Society of Iran, 2020-2023
- Chair of One-day Online Workshop on Novel Features and Applications of Optical Manipulation, School of Nano Science, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, September 2020
- Member of technical program committee of 25th General Congress of the International Commission for Optics (ICO), Dresden, Germany, September 2020 (postponed)
- Chair of 25th IASBS Physics Winter School, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran, February 2020
- Founder of ForouzanZistFanavaran Co., Zanjan, Iran, 2019
- Chair of 24th IASBS Physics Winter School, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran, February 2019
- Founder of IASBS Multi-dimensional Imaging and Detection Laboratory, Department of Physics, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran
- Founder of ZNU Optical  $\mu$ Manipulation and Digital Holography Laboratory, Department of Physics, University of Zanjan, Zanjan, Iran
- Chair of 13th Iranian Physics Education Conference (PEC13), University of Zanjan, Zanjan, Iran, August 2012
- Member of the scientific committee of 20th Iranian Conference on Optics and Photonics, Shiraz University of Technology, Shiraz, Iran, January 2013
- Member of:
  - International Center for Theoretical Physics (ICTP), junior associated member (2012-2018)
  - Physical Society of Iran (PSI), continuous member
  - Optics and Photonics Society of Iran (OPSI), continuous member
  - Optical Society of America (OSA), International Society of Optical Engineering (SPIE), Institute of Electrical and Electronics Engineers (IEEE)

- Journal reviewer for:

Optics Express, Optics Letter, Applied Optics, Journal of the Optical Society of America A, Journal of Optics, Journal of Biomedical Optics, Optics and Lasers in Engineering, Optical Engineering, Life Sciences, Materials Chemistry and Physics, IEEE Transactions on Instrumentation and Measurement, Journal of Mechanical Science and Technology, International Journal of Optomechatronics, Journal of Micro/Nanolithography, MEMS, and MOEMS (“Certificate of appreciation” awarded from the journal)

- Conference reviewer for:

OPSI annual conferences, PSI annual conferences, IPM Physics Spring Conference

## ↑ **Graduated Students:**

- **2020:**

- Marzieh Allah Panahi
- Yasaman Ganjkhani (Ph.D.)

- **2019:**

- Jalil Esmkhani (University of Zanjan)

- **2018:**

- Vahideh Farzam Rad (Ph.D.)

- **2017:**

- Vahid Abbasian

- **2015:**

- Rana Mousaviani
- Hamidreza Darabian

- **2014:**

- Tayebbeh Saghaei
- Peyman Soltani

- **2013:**

- Samira Ebrahimi
- Jila Rafighdoust
- Mehrnaz Zargham
- Darioush Hayati

- Mitra Namnabat
- Farzaneh Borji Monfared
- **2012:**
  - Shiva Moradi Mehr
  - Abdorrahim Tavakoli
  - Narges Fathi

## **Current Postdocs and Students:**

- **Postdocs:**
  - Dr. Vahideh Farzam Rad
- **Ph.D. Students:**
  - Shiva Moradi Mehr
  - Mahshid Karimi
  - Majid Panahi (Advisor)
  - Koushan Mohsenvand
  - Mina Mollaei
- **M.Sc. Students:**
  - Ramin Jamali
  - Taha Ohadi
  - Elyas Nasimdoust
  - Maryam Mohammadi (ICTP-IASBS program)
  - Faezeh Ammarlou
  - Nafiseh Mahboubi
  - Sara Hamzehzadeh (University of Zanjan)

## **↑ Patents:**

1. “On-line automatic subclinical mastitis detection device based on optical scattering and an automatic milk sampling system comprising this device” Inventors: S. Sevli, S. Yilmaz, H. Koca, V. Sahin, G. Volpe, S. Paladugu, S. K. P. Velu, **A. R. Moradi**, WO Patent 2017065708 A1, 20 April 2017

## **↑ Publications-Journals:**

\* Corresponding Author

35. M. J. Siavashani, M. T. Tavassoly, and **A. R. Moradi** \*, “The effect of edge sharpness on phase-step diffractometry”, to appear in *Opt. Lasers Eng.*
34. M. J. Siavashani, I. Naghedi, V. Abbasian, E. A. Akhlaghi, M. A. Charsooghi, M. T. Tavassoly, and **A. R. Moradi** \*, “3D imaging using scanning diffractometry”, *Sci. Rep.* 11, 482, 2021
33. A. Akhtar, A. Andleeb, T. S. Waris, M. Bazzar, **A. R. Moradi**, and M. Yar, “Neurodegenerative diseases and effective drug delivery: A review of challenges and novel therapeutics,” *J. Controlled Release* 330, pp. 1152-1167, 2021
32. V. Farzam Rad, M. Panahi, R. Jamali, A. Darudi, and **A. R. Moradi** \*, “Non-invasive in situ monitoring of bone scaffold activity by speckle pattern analysis,” *Biomed. Opt. Express* 11(11), pp. 6324-6336, 2020
31. M. Allah Panahi, Z. Tahmasebi, V. Abbasian, M. Amiri, and **A. R. Moradi** \*, “Role of pH level on morphology and growth rate of myelin figures,” *Biomed. Opt. Express* 11(10), pp. 5565-5574, 2020
30. Y. Ganjkhani, A. Calabuig Barroso, G. Pedrini, and **A. R. Moradi**, “Oblique illumination lateral shearing digital holographic microscopy,” *J. Opt.* 22, 095601, 2020
29. V. Abbasian and **A. R. Moradi** \*, “Microsphere-assisted super-resolved Mueller matrix microscopy,” *Opt. Lett.* 45(15), pp. 4336-4339, 2020
28. S. Moradi Mehr, L. Businaro, M. Habibi, and **A. R. Moradi** \*, “Collective behavior of evaporating droplets on superhydrophobic surfaces”, *AIChE Journal*: e16284, 2020
27. V. Farzam Rad and **A. R. Moradi** \*, “Flat wall proximity effect on micro-particle sedimentation in non-Newtonian fluids,” *Sci. Rep.* 10, 2741, 2020
26. M. Rizwan, Y. Ganjkhani, V. Farzam Rad, M. Bazzar, M. Yar, R. Yaya, and **A. R. Moradi** \*, “Surface characterizations of membranes and electrospun chitosan derivatives by optical speckle analysis,” *Surf. Interface Anal.* 52, pp. 132-139, 2020
25. V. Farzam Rad, E. R. Miquet, H. Cabrera, and **A. R. Moradi** \*, “Speckle pattern analysis of crumpled papers,” *Appl. Opt.* 58(24), pp. 6549-6554, 2019
24. V. Abbasian, S. Rasouli, and **A. R. Moradi** \*, “Microsphere-assisted self-referencing digital holographic microscopy in transmission mode,” *J. Opt.* 21(4), 045301, 2019
23. V. Farzam Rad, R. Khamedi, and **A. R. Moradi** \*, “The effect of martensite volume fraction on topography of dual phase steels,” *Matt. Lett.* 239, 21-23, 2019
22. V. Abbasian, Y. Ganjkhani, E. A. Akhlaghi, A. Anand, B. Javidi, and **A. R. Moradi** \*, “Super-resolved Miraru digital holography by oblique illumination”, *J. Opt.* 20(6), 065301, 2018
21. M. A. Charsooghi and **A. R. Moradi** \*, “Surface proximity effect in sedimentation investigated by digital holographic microscopy,” *Appl. Opt.* 57(17), pp. B179-B183, 2018
20. V. Abbasian, E. A. Akhlaghi, M. A. Charsooghi, M. Bazzar, and **A. R. Moradi** \*, “Digital holographic microscopy for 3D surface characterization of polymeric nanocomposites,” *Ultramicroscopy* 185C, pp. 72-80, 2018

19. P. Vora, V. Trivedi, S. Mahajan, N. Patel, M. Joglekar, V. Chhaniwal, **A. R. Moradi**, B. Javidi, and A. Anand, "Wide field of view common path lateral shearing digital holographic interference microscope," *J. Biomed. Opt.* 22(12), 126001, 2017
18. V. Farzam Rad, R. Tavakkoli, **A. R. Moradi** \*, A. Anand, and B. Javidi, "Calcium effect on membrane of an optically trapped erythrocyte studied by digital holographic microscopy," *Appl. Phys. Lett.* 111(8), 083701, 2017
17. Y. Ganjkhani, M. A. Charsooghi, E. A. Akhlaghi, and **A. R. Moradi** \*, "Superresolved Mirau digital holography by structured illumination," *Opt. Comm.* 404, pp. 110-117, 2017
16. P. Asgari, Y. Pourvais, P. Abdollahi, **A. R. Moradi** \*, R. Khamedi, and A. Darudi, "Digital holographic microscopy as a new technique for quantitative measurement of microstructural corrosion in AISI 304 stainless steel," *Materials & Design* 125, pp. 109-115, 2017
15. Y. Pourvais, P. Asgari, P. Abdollahi, R. Khamedi, and **A. R. Moradi** \*, "Microstructural surface characterization of stainless and plain carbon steel using digital holographic microscopy," *JOSA B* 34(5), pp. B36-B41, 2017
14. M. Aakhte, V. Abbasian, E. A. Akhlaghi, **A. R. Moradi** \*, A. Anand, B. Javidi, "Microsphere-assisted super-resolved Mirau digital holographic microscopy for cell identification," *Appl. Opt.* 56(9), pp. D8-D13, 2017
13. A. Argun, **A. R. Moradi**, E. Pince, G. B. Bagci, A. Imperato, and G. Volpe, "Non-Boltzmann steady-state distributions and modified non-equilibrium relations in active baths," *Phys. Rev. E.* 94, 062150, 2016
12. V. Farzam Rad, **A. R. Moradi** \*, A. Darudi, and L. Tayebi, "Digital holographic microscopy of phase separation in multicomponent lipid membranes," *J. Biomed. Opt.* 21(12), 126016, 2016
11. P. Soltani, A. Darudi, G. Nehmetallah, **A. R. Moradi**, and J. Amiri, "Accurate testing of aspheric surfaces using the transport of intensity equation by properly selecting the defocusing distance," *Appl. Opt.* 55(35), pp. 10067-10072, 2016
10. R. Musaviani, **A. R. Moradi** \*, and L. Tayebi, "Effect of humidity on liquid-crystalline Myelin figure growth using digital holographic microscopy," *Matt. Lett.* 173, pp. 162-166, 2016
9. M. Namnabat, S. Behrouzinia, **A. R. Moradi**, and K. Khorasani, "Determination of plasma temperature of copper vapour laser," *J. Plasma Phys.* 82(1), 905820105, 2016
8. T. Saghaei, **A. R. Moradi** \*, R. Shirsavar, and M. Habibi, "Liquid bulk rotation induced by electric field at free surface," *App. Phys. Lett.* 106(5), 053506, 2015
7. Y. Pourvais, P. Asgari, **A. R. Moradi** \*, and O. Rahmani, "Experimental and finite element analysis of higher order behavior of sandwich beam using digital projection moire," *Polymer Testing* 38, pp. 7-17, 2014
6. S. Ebrahimi, **A. R. Moradi**, A. Anand, and B. Javidi, "Digital holographic microscopy with coupled optical fiber trap for cell measurement and manipulation," *Opt. Lett.* 39(10), pp. 2916-2919, 2014 (Featured in vol. 9, issue 7, of *Virtual Journal for Biomedical Optics*)



5. N. Fathi, **A. R. Moradi**, M. Habibi, D. Vashaee, and L. Tayebi, “Digital holographic microscopy of the myelin figure structural dynamics and the effect of thermal gradient,” *Biomed. Opt. Express* 4(6), pp. 950-957, 2013
4. **A. R. Moradi**, M. K. Ali, M. Daneshpanah, and B. Javidi, “Detection of calcium induced morphological changes of living cells using optical traps,” *IEEE Photon. J.* 2(5), pp. 775-783, 2010
3. L. Selvaggi, E. Ferrari, **A. R. Moradi**, S. Santucci, and D. Cojoc, “Optimized multi-view imaging improves the observation of optically manipulated non-spherical particles,” *J. Opt.* 12, 035303-1-6, 2010
2. M. T. Tavassoly, M. Amiri, A. Daroudi, R. Alipour, A. Saber and **A. R. Moradi**, “Optical diffractometry,” *JOSA A* 26(3), pp. 540-547, 2009
1. **A. R. Moradi**, E. Ferrari, V. Garbin, E. Di Fabrizio, and D. Cojoc, “Strength control in multiple traps generated by means of diffractive optical elements,” *OAM-RC* 1 (4), pp. 158-161, 2007

## ↑ **Publications-Proceedings-International:**

\* Corresponding Author

26. A. Argun, **A. R. Moradi**, E. Pince, G. B. Bagci, A. Imparato, and G. Volpe, “Non-Boltzmann stationary distributions and non-equilibrium relations in active baths,” *Optics in the Life Sciences Congress*, OSA Technical Digest, paper OtW3E.5, 2017
25. **A. R. Moradi** \*, “Super-resolved Mirau digital holographic microscopy,” 16th Euro-American workshop on information optics (WIO2017), IEEE conference proceeding series, 2017 (Invited paper)
24. Y. Pourvais, P. Asgari, P. Abdollahi, **A. R. Moradi** \*, R. Khamedi, and A. Darudi, “Quantitative analysis of stainless steel corrosion by reflective digital holographic microscopy,” *Frontiers in Optics* 2016, OSA Technical Digest, paper JTh2A.76, 2016
23. V. Farzamrad, R. Tavakkoli, **A. R. Moradi** \*, and B. Javidi, “Integrated blinking optical trapping and digital holography system to detect dynamic morphology of cells,” *Book of abstracts, ICTP-IASBS workshop of structured light and matter*, September 2016
22. Y. Ganjkhani, E. A. Akhlaghi, M. A. Charsooghi, and **A. R. Moradi** \*, “Resolution enhancement in Mirau holographic microscopy through structured illumination,” *Book of abstracts, ICTP-IASBS workshop of structured light and matter*, September 2016
21. A. Argun, **A. R. Moradi**, E. Pince, G. B. Bagci, A. Imparato, and G. Volpe, “Experimental evidence of the failure of jarzynski equality in active baths,” *Book of abstracts, 4th international soft matter conference*, September 2016
20. V. Farzamrad, R. Tavakkoli, **A. R. Moradi** \*, and B. Javidi, “Detection of Calcium-induced morphological changes on RBCs by digital holographic microscopy and blinking optical tweezers,” 15th

Euro-American workshop on information optics (WIO16), IEEE conference proceeding series, July 2010

19. Y. Ganjkhani, E. A. Akhlaghi, M. A. Charsooghi, and **A. R. Moradi** \*, “Structured illumination for high resolution Mirau digital holography,” Proc. 4th International Symposium on Optics and its Applications (OPTICS-2016), July 2016
18. V. Abbasian, E. A. Akhlaghi, M. A. Charsooghi, M. Bazzar, and **A. R. Moradi** \*, “Identification of nanostructured composites of poly triazole-amide-imides by microsphere-assisted digital holographic microscopy,” Proc. 4th International Symposium on Optics and its Applications (OPTICS-2016), July 2016
17. P. Soltani, A. Darudi, **A. R. Moradi**, J. Amiri, and G. Nehmetallah, “A guide to properly select the defocusing distance for accurate solution of transport of intensity equation while testing aspheric surfaces,” Proc. SPIE Vol. 9868, P. 986804-1, 2016
16. Y. Pourvais, P. Asgari, **A. R. Moradi** \*, and O. Rahmani, “Nondestructive analysis of advanced materials nonlinear behavior using digital projection moire,” Proc. SPIE Vol. 9117, p. 91171B, 2014
15. T. Saghaei, R. Shirsavar, **A. R. Moradi** \*, and M. Habibi, “Induced rotation in a freely suspended 5CB liquid crystal (LC) films by crossed electric fields,” Proc. 2nd International Symposium on Optics and its Applications (OPTICS-2014), September 2014
14. Y. Pourvais, P. Asgari, **A. R. Moradi** \*, and O. Rahmani, “Digital projection moire as a powerful means of nondestructive analysis of advanced materials,” Proc. 2nd International Symposium on Optics and its Applications (OPTICS-2014), September 2014  
**(Best oral presentation award)**
13. P. Asgari, Y. Pourvais, **A. R. Moradi** \*, and R. Khamedi, “Investigation of real-time 3D evolution of crystal structure in carbon steels using digital holographic microscopy,” Proc. 2nd International Symposium on Optics and its Applications (OPTICS-2014), September 2014
12. H. Darabian, A. Darudi, A. Masoumi, and **A. R. Moradi**, “Retrieval of aerosol phase function by multi-wavelength bistatic lidar,” Proc. 2nd International Symposium on Optics and its Applications (OPTICS-2014), September 2014
11. R. Mousaviani, V. Farzam Rad, **A. R. Moradi** \*, and L. Tayebi, “Study of growth rate in coiled myelin figures using digital holographic microscopy,” Proc. 2nd International Symposium on Optics and its Applications (OPTICS-2014), September 2014
10. S. Ebrahimi, P. Soltani, **A. R. Moradi** \*, and L. Tayebi, “Detection of the effect of nanoparticles on myelin figures growth using a compact digital holographic microscope,” Proc. SPIE Vol. 8785, p. 8785GA, 2013
9. P. Soltani, **A. R. Moradi**, A. Darudi, and R. Shomali, “High resolution optical surface testing using transport of intensity equation,” Proc. SPIE Vol. 8785, p. 87851K, 2013
8. A. Nasehi, S. Moradi Mehr, and **A. R. Moradi** \*, “Detection of refractive index changes in chemical reactions of fluids within micro channels using digital holographic microscopy,” Proc. SPIE Vol. 8785, p. 878511, 2013

7. M. Zargham, **A. R. Moradi** \*, and A. Najafi, “Experimental investigation of surface tension in Newtonian and non-Newtonian fluids with optical diffractometry,” Proc. SPIE Vol. 8785, p. 8785DN, 2013
6. F. Borji Monfared, A. Mohebi, **A. R. Moradi** \*, and S. Tavaddod, “Detection of silver ions induced morphological changes on E. coli membrane using digital holographic microscopy,” Proc. SPIE Vol. 8556, p. 85560N, 2012
5. **A. R. Moradi** \*, A. Anand, M. K. Ali, and B. Javidi, “Digital holographic microscopy of optically trapped three-dimensional microstructures,” Proc. SPIE Vol. 8043, pp. 804-310, 2011
4. N. Patel, V. Sinha, V. Chhaniwal, **A. R. Moradi**, A. Anand, and B. Javidi, “Digital holographic interference microscopy for quantitative phase contrast imaging of dynamic micro- objects,” International Conference on Contemporary Trends in Optics and Optoelectronics, January 2011
3. **A. R. Moradi** \*, M. K. Ali, M. Daneshpanah, and B. Javidi, “Application of optical trapping for detection of Calcium induced morphological changes of red blood cells,” 9th Euro-American workshop on information optics (WIO10), IEEE conference proceeding series, September 2010  
(Invited paper)
2. **A. R. Moradi** and D. Cojoc, “Force trapping gradient using diffractive optical elements,” Proc. SPIE Vol. 6326, p. 63262V, 2006
1. **A. R. Moradi**, M. Danailov, and D. Cojoc, “Comparison of fast Fourier transform based algorithms for free space propagation,” Proc. SPIE Vol. 5972, pp. 295-301, 2005

## ↑ Publications-Proceedings-National:

\* Corresponding Author

30. D. Kafian, V. Abbasian, S. Akbari Birgani, **A. R. Moradi**, and D. Abdollahpour, “Resolution enhancement of light-sheet fluorescence microscopy using a microsphere” Proc. ICOP20 Vol. 26, 2020
29. M. Allahpanahi, Z. Tahmasebi, M. Amiri, and **A. R. Moradi** \*, “Experimental measurement of Goos-Haenchen shift” Proc. PSI Physics98, September 2019
28. Y. Ganjkhani, M. Rezwn, V. Farzam Rad, M. Bazzar, M. Yar, and **A. R. Moradi** \*, “Classification of chitosan nano-fibers by speckle patterns” Proc. ICOP19 Vol. 25, 2019
27. Y. Ganjkhani, E. A. Akhlaghi, and **A. R. Moradi** \*, “Real-time multi-wavelength phase-shifting digital holography” Proc. PSI Physics97, September 2018
26. V. Farzam Rad, M. A. Charsooghi, and **A. R. Moradi** \*, “Study of the surface effect on colloid sedimentation by digital holographic microscopy” Proc. ICOP18 Vol. 24, 2018

25. Y. Ganjkhani, V. Abbasian, E. A. Akhlaghi, and **A. R. Moradi** \*, “The effect of inclined illumination on enhancing the resolution in microsphere-assisted Mirau digital holographic microscopy” Proc. ICOP18 Vol. 24, 2018
24. Y. Ganjkhani, V. Abbasian, E. A. Akhlaghi, M. A. Charsooghi, and **A. R. Moradi** \*, “Super-resolution by Structured Illumination in Mirau Digital Holographic Microscopy” Proc. ICOP18 Vol. 24, 2018
23. V. Abbasian, M. Bazzar, E. A. Akhlaghi, M. A. Charsooghi, and **A. R. Moradi** \*, “Detection of nanoparticle in polymeric composites by digital holography,” Proc. ICOP17 Vol. 23, 2017
22. V. Abbasian, Y. Ganjkhani, E. A. Akhlaghi, M. A. Charsooghi, and **A. R. Moradi** \*, “Improved Mirau digital holography for red blood cell 3D visualization,” Proc. PSI Physics95, Vol. 25, 2016
21. V. Abbasian, M. Aakhte, E. A. Akhlaghi, and **A. R. Moradi** \*, “Enhancement of lateral resolution of Mirau digital holographic microscopy,” Proc. ICOP15 Vol. 22, 2016
20. V. Farzam Rad, **A. R. Moradi** \*, and L. Tayebi, “Study of liquid-crystalline structure formation in multilamellae multicomponent lipid membranes using digital holographic microscopy,” Proc. ICOP15 Vol. 22, 2016
19. P. Asgari, Y. Pourvais, P. Abdollahi, **A. R. Moradi** \*, and R. Khamedi, “Three-dimensional investigation of crystal structure in carbon steels using digital holographic microscopy,” Proc. ICOP15 Vol. 21, 2015
18. T. Saghaei, R. Shirsavar, **A. R. Moradi** \*, and M. Habibi, “Induced rotation in liquid crystals by external electric fields,” 20th annual IASBS meeting on condensed matter physics, May 2014
17. R. Mousaviani, N. Fathi, **A. R. Moradi** \*, and L. Tayebi, “Study of the effect of humidity on dynamics of myelin figure structure using digital holographic microscopy,” Proc. ICOP14 Vol. 20, p. 17, 2014
16. P. Asgari, Y. Pourvais, **A. R. Moradi** \*, and O. Rahmani, “Three-dimensional profilometry and non-destructive measurement of out-of-plane deflection under bending by digital projection moire” Proc. ICOP14 Vol. 20, p. 220, 2014
15. S. Ebrahimi, P. Soltani, **A. R. Moradi** \*, and A. Daroudi, “Fiber optical trap calibration using a high-speed camera with limited bandwidth,” Proc. ICOP14 Vol. 20, p. 248, 2014
14. M. Namnabat, **A. R. Moradi** \*, S. Behrouzinia, M. Gheshlaghi, S. H. Nabavi, and K. Khorasani, “Determination of plasma temperature of copper vapor laser (CVL) by the use of Boltzmann plot method for CVL’s mirror and copper coated mirror,” Proc. ICOP14 Vol. 20, p. 42, 2014
13. P. Soltani, R. Shomali, J. Amiri, A. Darudi, and **A. R. Moradi** \*, “High spatial resolution optical surface testing using transport of intensity equation and Shack-Hartmann sensor,” Proc. 3rd ICOLE, 3, p. 200, 2013  
(Selected paper)
12. J. Rafighdoust, J. Amiri, A. Daroudi, **A. R. Moradi** \*, “Comparison of the transport of intensity equation and digital holography on study of microscopic phase objects,” Proc. PSI Physics92, September 2013

11. S. Ebrahimi, P. Soltani, **A. R. Moradi** \*, L. Tayebi, and M. Habibi, “Study of Fe<sub>2</sub>O<sub>3</sub> nanoparticles effect on lipid bilayers pearling using a compact digital holographic microscope,” Proc. PSI Physics92, September 2013
10. M. Zargham, **A. R. Moradi** \*, and A. Najafi, “Experimental investigation of surfactant effect on surface tension with optical diffractometry,” 19th annual IASBS meeting on condensed matter physics, April 2013  
(Selected poster)
9. T. Saghaei, R. Shirsavar, **A. R. Moradi** \*, and M. Habibi, “Velocity change of a rotating film in presence of E. coli bacteria,” 19th annual IASBS meeting on condensed matter physics, April 2013
8. M. Namnabat, S. Behrouzinia, M. Gheshlaghi, K. Khorasani, S. H. Nabavi, and **A. R. Moradi**, “Design and fabrication of copper vapor laser’s mirror and investigation of its output power and temperature,” Proc. ICOP12 Vol. 19, pp. 403-407, 2013
7. P. Soltani, J. Amiri, R. Shomali, and **A. R. Moradi**, “Optical wedge testing by Shack-Hartmann Wavefront Sensor,” PSI Workshop on Optical Measurement, November 2012
6. F. Borji Monfared, A. Mohebi, **A. R. Moradi** \*, and M. Habibi, “Holography technique to study the E. coli microscopic changes exposed by hospital grade antibacterials,” Proc. 6th Iranian Congress of Clinical Microbiology, October 2012
5. F. Borji Monfared, A. Mohebi, S. Moradi Mehr, **A. R. Moradi** \*, and M. Habibi, “Study of antibacterial microscopic effects on the membrane of E. coli using digital holographic microscopy,” Proc. 17th National and 5th International Iranian Biology Conference, September 2012
4. R. Tavakoli, N. Fathi, **A. R. Moradi** \*, and M. K. Ali, “Study of morphological changes of Red Blood Cells induced by Glucose Level Elevation using Digital Holography Microscopy,” Proc. PSI Physics91, September 2012
3. N. Fathi, R. Tavakoli, R. Mousaviani, **A. R. Moradi** \*, and M. Habibi, “Study of temperature gradient on the growth of multilamellar tubes,” Proc. PSI Physics91, September 2012
2. N. Fathi, R. Tavakoli, **A. R. Moradi** \*, and M. Habibi, “Study of domain formation in lipid mixtures induced by hydrophobic solute using digital holography,” Proc. ICOP11 Vol. 18, pp. 269-273, 2012
1. S. Moradi Mehr, F. Borji, **A. R. Moradi** \*, and M. Habibi, “Measurement of refractive index of fluids within microchannels using digital holography,” Proc. ICOP11 Vol. 18, pp. 707-710, 2012

## ↑ Talks:

42. “Speckle Tweezers,” 27th IPM Physics Spring Conference, IPM, Tehran, Iran, June 2020 (Invited speaker)
41. “Multi-Dimensional Imaging and Detection Lab Research Activities”, IASBS, Zanjan, Iran, December 2019

40. "Checklist for grant writing," Workshop on Grant Writing, Zanjan University of Medical Sciences, Zanjan, Iran, October 2019 (Invited speaker)
39. "Super-resolution self-referencing digital holographic microscopy," 7th Symposium on Optics and its applications, Yerevan, Armenia, September 2019 (Invited speaker)
38. "Non-Boltzmann distributions in active baths," Workshop on Non-equilibrium Soft Matter, IPM, Tehran, Iran, April 2019 (Invited speaker)
37. "Non-destructive 3D imaging of cells," 7th Basic and Clinical Neuroscience Congress, Iran University of Medical Sciences, Tehran, Iran, December 2018
36. "3D imaging by scanning diffractometry," PSI seminar on Fresnel diffraction from phase steps and its application, University of Tehran, October 2018 (Invited speaker)
35. "Digital Holographic Microscopy: a noninvasive method for 3D imaging," International Workshop on Optics, Hazara University, Mansehra, Pakistan, December 2017 (Invited speaker)
34. "Digital Holographic Microscopy: a noninvasive method for 3D imaging," International Workshop on Optics and Photonics (IWOP), Quaid-i-Azam University, Islamabad, December 2017 (Invited speaker)
33. "Super-resolved 3D imaging," IPM, Tehran, Iran, November 2017
32. "Super-resolved digital holography for noninvasive 3D structural characterization of nano-composites," International Conference on Nano-composites and Multi-functional Materials, National University of Science and Technology, Islamabad, Pakistan, August 2017 (Invited speaker) - presented through video conference
31. "Super-resolved Mirau digital holographic microscopy," 16th Euro-American workshop on information optics, Interlaken, Switzerland, July 2017 (Invited speaker)
30. "Digital holography for noninvasive 3D visualization of biomaterials", IPM, Tehran, Iran, December 2016
29. "Digital holography for noninvasive 3D visualization of cells", 5th Basic and Clinical Neuroscience Congress, Iran University of Medical Sciences, Tehran, Iran, December 2016
28. "3D super-resolution imaging", IASBS, Zanjan, Iran, February 2016
27. "Digital holographic microscopy of optically trapped micro-objects", Bilkent University, Ankara, Turkey, October 2015
26. "Digital holographic microscopy of optically trapped micro-objects", 2nd International Symposium on Optics and its Applications, Yerevan, Armenia, September 2014
25. "Digital holographic microscopy of Myelin Figures", Hands-On Research in Complex Systems School, ICTP, Trieste, Italy, July 2014
24. "Digital holographic microscopy of optically trapped biosamples", Department of Physics, University of Tehran, Tehran, September 2013

23. "Detection of the effect of nanoparticles on myelin figures growth using a compact digital holographic microscope", RIAO/OPTILAS 2013 conference, University of Porto, Portugal, July 2013
22. "High resolution optical surface testing using transport of intensity equation", RIAO/OPTILAS 2013 conference, University of Porto, Portugal, July 2013
21. "Digital holographic microscopy and optical trapping applications in ZNU Optical  $\mu$ Manipulation Lab", CNR-IOM, Elettra synchrotron, Trieste, Italy, July 2013
20. "Diffractive optics", Optics group weekly seminars, University of Zanjan, Zanjan, Iran, December 2012
19. "Digital holographic microscopy of optically trapped microobjects", University of Zanjan, Zanjan, Iran, April 2011
18. "Detection of morphological changes of cells using optical traps", Winter College on Optics in Imaging Science, ICTP, Trieste, Italy, February 2011
17. "Applications of multiple optical trapping", University of Zanjan, Zanjan, Iran, November 2010
16. "Report on the new researches on optical trapping applications at IASBS", IASBS, Zanjan, Iran, November 2010 (Invited speaker)
15. "Detection of calcium induced morphological changes of red blood cells using optical traps", 9th Euro-American workshop on information optics, Helsinki, Finland, July 2010 (Invited speaker)
14. "Implementation of DOEs in homemade SLM; Power spectrum method for multiforce trap callibration", weekly seminars of IASBS, Zanjan, Iran, February 2010
13. "Raman Tweezers", weekly seminars of IASBS, Zanjan, Iran, June 2008
12. "RBC Manipulation by means of diffractive optical elements", Winter college on Micro and Nano Photonics in life science, ICTP, Trieste, Italy, February 2008
11. "RBC Manipulation by means of diffractive optical elements", Condensed Matter group Seminars, IPM, Tehran, Iran, December 2007
10. "Diffractive Optics applications in Optical Manipulation", University of Kurdistan, Sanandaj, Iran, November 2007
9. "Fresnel Diffraction from phase steps", weekly seminars of IASBS, Zanjan, Iran, April 2007
8. "Multiple-force trapping by means of diffractive optical elements", The Abdus Salam international center for theoretical physics, Trieste, Italy, February 2006
7. "Multiple-force trapping by means of diffractive optical elements", weekly seminars of IASBS, Zanjan, Iran, January 2006
6. "Comparison of fast Fourier transform based algorithms for free space propagation", The Abdus Salam international center for theoretical physics, Trieste, Italy, February 2005

5. “Comparison of fast Fourier transform based algorithms for free space propagation”, ATOM-N 2004, Bucharest, Romania, November 2004
4. “Diffractive Optics”, weekly seminars of IASBS, Zanjan, Iran, April 2004
3. “Degenerate four wave mixing using diffraction theory”, Vrije Universiteit, Division of Physics & Astronomy, Amsterdam, Netherlands, February 2004
2. “Degenerate four wave mixing using diffraction theory”, The Abdus Salam international center for theoretical physics, Trieste, Italy, February 2004
1. “Quantum imaging”, weekly seminars of IASBS, Zanjan, Iran, May 2002

### ↑ **Schools and Conferences Attended:**

50. 27th IPM Physics Spring Conference, IPM, Tehran, Iran, June, 24-25, 2020
49. 7th International Symposium “Optics & its applications 2019” (OPTICS-2019), Yerevan, Armenia, September 19-25, 2019
48. 25th Annual IASBS Meeting on Condensed Matter Physics, IASBS, Zanjan, Iran, June 13-14, 2019
47. 11th Iranian Light Source Facility Users’ Meeting, Qazvin Azad University, Qazvin, Iran, April 29-30, 2019
46. Workshop on Non-equilibrium Soft Matter, IPM, Tehran, Iran, April 11, 2019
45. The Annual Physics Conference of Iran, Imam Khomeini University, Qazvin, Iran, August 27-30, 1397
44. International Workshop on Optics and Photonics (IWOP), Quaid-i-Azam University, Islamabad, December 10-15, 2017
43. International Workshop on Optics, Hazara University, Mansehra, Pakistan, December 16, 2017
42. Workshop on Physical Virology, ICTP, Trieste, Italy, July 17-21, 2017
41. 16th Euro-American Workshop on Information Optics, Interlaken, Switzerland, July 3-7, 2017
40. NanoDay 2016, National Nanotechnology Research Center, Ankara, Turkey, May 26th, 2016
39. NanoDay 2015, National Nanotechnology Research Center, Ankara, Turkey, May 15th, 2015
38. COST action MP 1305 meeting on ”Experimental Flowing Matter”, Bilkent University, Ankara, Turkey, April 23-24, 2015
37. 2nd International Symposium on Optics and its Applications (OPTICS-2014), Yerevan, Armenia, September 1-5, 2014
36. Hands-On Research in Complex Systems School, ICTP, Trieste, Italy, June 29-July 11, 2014



35. 1st Workshop on Hamamatsu Camera Solution for Biotech Industry, Elettra-Sincrotrone, Trieste, Italy, June 4th, 2014
34. 20th Iranian Conference on Optics and Photonics, Shiraz, Iran, January 28-30, 2014
33. RIAO/OPTILAS 2013 conference, University of Porto, Portugal, July 22-26, 2013
32. International Workshop on Singularities and Topological Structures of Light, ICTP, Trieste, Italy, July 8-12, 2013
31. 19th Annual IASBS Meeting on Condensed Matter Physics, IASBS, Zanjan, Iran, May 29-31, 2013
30. PSI Workshop on Optical Measurement, Tehran, Iran, November 15, 2012
29. 13th Iranian Physics Education Conference, Zanjan, Iran, August 23-25, 2012 (Chair)
28. 18th Iranian Conference on Optics and Photonics, Tabriz, Iran, January 26-28, 2012
27. The ICTP Winter Collage on Optics in Imaging Science, Trieste, Italy, January 31-February 12, 2011
26. 9th Euro-American Workshop on Information Optics, Helsinki, Finland, July 12-16, 2010
25. 16th Iranian Conference on Optics and Photonics, Yazd, Iran, January 26-28, 2010
24. 15th Annual IASBS Meeting on Condensed Matter Physics, IASBS, Zanjan, Iran, May 21-22, 2009
23. 14th Annual IASBS Meeting on Condensed Matter Physics, IASBS, Zanjan, Iran, May 22-23, 2008
22. The ICTP Winter Collage on Micro and Nano Photonics in Life Science, Trieste, Italy, February 11-22, 2008
21. The Preparatory School to the ICTP Winter Collage on Micro and Nano Photonics in Life Science, Trieste, Italy, February 4-8, 2008
20. 13th Iranian Conference on Optics and Photonics, Tehran, Iran, February 6-8, 2007
19. 12th Annual IASBS Meeting on Condensed Matter Physics, IASBS, Zanjan, Iran, May 24-26, 2006
18. School on Mathematical Methods for Optics, Trieste, Italy, January 23-27, 2006
17. The ICTP Winter Collage on Quantum and Classical Aspects of Information Optics, Trieste, Italy, January 30- February 10, 2006
16. The ICS Training Course on Experimental Methods in Nanophotonics, Trieste, Italy, February 21-25, 2005.
15. The ICTP Winter College on Optics and Photonics in Nanosciences and Nanotechnology, Trieste, Italy, February 7-18, 2005
14. 2nd edition of the International Conference of Advanced Topics on Optoelectronics, Microelectronics and Nanotechnologies (ATOM-N 2004), Bucharest, Romania, November 24-26, 2004

13. International Student Seminar on Digital Diffractive Optics and their Applications (ISDDO-2004), Bucharest, Romania, November 23rd, 2004
12. 13th International Laser Physics Workshop (LPHYS'04), Trieste, Italy, July 12-16, 2004
11. Statistical Physics of Complex Fluids STATPHYS22 Satellite Meeting, IASBS, Zanjan, Iran, June 27-July 1, 2004
10. 10th Annual IASBS Meeting on Condensed Matter Physics, IASBS, Zanjan, Iran, May 13-14, 2004.
9. The ICS Training Course on Design and Implementation of Interferometry Systems, Trieste, Italy, February 2004
8. The ICTP Winter College on Interferometry and Applications in Modern Physics, Trieste, Italy, February 2004
7. 9th PSI Conference of Photonics, Tehran, Iran, February 2003
6. The Annual Conference of the Physical Society of Iran (PSI), Zanjan, Iran, August 2002
5. 8th Annual IASBS Meeting on Condensed Matter Physics, IASBS, Zanjan, Iran, May 9-10, 2002
4. International Summer College on Optics and Photonics, Center for Applied Physics and Astronomical Research, University of Tabriz, Iran, August 12-24, 2001
3. 1st Regional Conference on Magnetic and Superconducting materials (MSM-99), Sharif University of Technology, Tehran, Iran, September 27-30, 1999
2. Seminar on Complex Systems, Sharif University of Technology, Tehran, Iran, 1998
1. School of Perturbation, Sharif University of Technology, Tehran, Iran, 1997

### ↑ **Further Activities:**

- Persian Calligraphy
- Persian Music