

1. PERSONAL INFORMATION:

FIRST NAME: Fatima
LAST NAME: Matroodi
DATE OF BIRTH: 25/03/1981
NATIONALITY: Iran



ADDRESS: Department of Physics, Faculty of Science, Shahid Chamran University of Ahvaz, Golestan Blvd, Ahvaz, Iran, 61357-83151.

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2. EDUCATION:

- Ph. D. in Photonics (5 specialized courses including Laser spectroscopy and Biophotonics; GPA 18.54 as a top student) 2009-2015, Laser and Plasma Research Institute, Shahid Beheshti University, Tehran, Iran.
Title of dissertation: “**Design and study of combined LIBS and Raman spectroscopy setups for atomic and molecular specification**”
- M. Sc.in Photonics, (GPA 16.75) 2004-2007, Laser and Plasma Research Institute, Shahid Beheshti University, Tehran, Iran.
Title of thesis: “**Fabrication and measuring the magnetoresistance of glass/NiO/Co/Cu/Co/Ti multilayers and investigation of the effect of laser annealing on the ac-resistance variation in Co-based amorphous wire**”.
- B. Sc. In Physics, (GPA 14.94)1999 -2003, Faculty of Sciences, Imam Khomeini International University, Qazvin,Iran.
- ICTP TRILL fellowship award for summer 2018.
- Attended an ICTP winter college on photonics 2014 in Trieste, Italy.
- Attended an ICTP winter college on Optics: Optical Frequency Combs - from multispecies gas sensing to high precision interrogation of atomic and molecular targets 2016 in Trieste, Italy.
- Attended an ICTP winter college on Optics: Extreme Nonlinear Optics, Attosecond Science and High-field Physics 2018 in Trieste, Italy.
- Attended an ICTP winter college on Applications of Optics and Photonics in Food Science 2019 in Trieste, Italy.

3. RESEARCH

Past Research:

- Fabrication of glass/NiO/Co/Cu/Co/Ti multilayers by electron beam evaporation system and measuring the giant magnetoresistance in them
- Investigation of the effect of laser annealing on the ac-resistance variation in Co-based amorphous wire
- Synthesis of gold nanoparticles
- Inserting nanoparticles into cancer cells
- Stimulated Raman spectroscopy
- Laser-induced breakdown spectroscopy (LIBS) of chemical and organic materials and minerals

Current Research:

- Raman spectroscopy of chemical and biological materials, minerals and carbon nanotubes
- Fluorescence spectroscopy
- Diverse techniques for combining Raman spectroscopy and LIBS
- Programing for signal processing
- Photodynamic therapy
- Photothermal lens spectrometry
- Self-mixing interferometry

4.EMPLOYMENT

| | | | |
|--|------|------|--------------------|
| Shahid Chamran University | 2015 | now | Assistant Prof. |
| Shahid Beheshti University | 2012 | 2013 | Research assistant |
| Shahid Beheshti University | 2010 | 2011 | Teacher assistant |
| Islamic azad university Mahshahr branch | 2009 | 2010 | Altdrys right |
| Payame Noor University Khoramshahr Center | 2009 | 2010 | Altdrys right |
| Payame Noor University Bandar Imam Khomeini Center | 2009 | 2009 | Altdrys right |

5. CONFERENCES

| Name | Place | Date From | Date To |
|--|--------------|------------|------------|
| The third congress on nanotechnology | Shiraz, Iran | 05/02/2007 | 08/02/2007 |
| The 17th Iranian Conference on Optics and Photonics and the third Iranian Conference on Photonics Engineering | Kerman, Iran | 07/02/2010 | 09/02/2010 |
| The 18th Iranian Conference on Optics and Photonics and the fourth Iranian Conference on Photonics Engineering | Tabriz, Iran | 06/02/2011 | 08/02/2011 |

| Name | Place | Date From | Date To |
|---|-------------------------------|------------|------------|
| International Conference on Raman Spectroscopy2012 | Bangalore, India | 12/08/2012 | 17/08/2012 |
| International Conference on Raman Spectroscopy2014 | Jena, Germany | 10/08/2014 | 15/08/2014 |
| 2nd International Symposium on Optics and its Applications | Yerevan and Ashtarak, Armenia | 01/09/2014 | 05/09/2014 |
| The 21th Iranian Conference on Optics and Photonics and the 7th Iranian Conference on Photonics Engineering | Tehran, Iran | 13/01/2015 | 15/01/2015 |
| International OSA Network of Students Tunis 2015 | Carthage, Tunisia | 01/09/2015 | 05/09/2015 |
| Regional Conference on Women in Physics | Islamabad, Pakistan | 25/04/2016 | 27/04/2016 |
| 4th International School and Conference "Saint-Petersburg OPEN 2017" | St. Petersburg, Russia | 03/04/2017 | 06/04/2017 |
| Second Meeting on Women in Physics | Isfahan, Iran | 18/05/2017 | 18/05/2017 |
| National Conference on Basic Knowledge Research in Oil, Gas, Refining and Petrochemical Industries | Ahvaz, Iran | 12/06/2020 | 12/06/2020 |
| Exchange of Experiences on e-Learning Implementations by Universities in Covid 19 Crises | Tehran, Iran | 11/08/2020 | 13/08/2020 |
| Lasers and Biomedical Photonics summer school 2020 | Tehran, Iran | 05/09/2020 | 10/09/2020 |

6. PUBLICATIONS AND PRESENTATIONS

- 1- H. Cabrera, **F. Matroodi (as corresponding author)**, H. D. Cabrera, E. E. Ramírez-Miquet, "Frequency-resolved photothermal lens: An alternative approach for thermal diffusivity measurements in weak absorbing thin samples." International Journal of Heat and Mass Transfer 158 (2020): 120036.
- 2- **F. Matroodi**, H. Cabrera, D. Korte, "Photothermal Lens Spectroscopy for Detection of Metallic Impurities in Water", Journal of Research on Many-body Systems, Vol. 9, Issue 4, pp. 69-75 (2020).
- 3- H. Cabrera, I. Ashraf, **F. Matroodi (as corresponding author)**, E. E. Ramírez-Miquet, J. Akbar, J. J. Suárez-Vargas, J. F. Barrera Ramírez, D. Korte, H. Budasheva, J. Niemela, "Photothermal lens technique: a comparison between conventional and self-mixing schemes", Laser Physics 29, no. 5 (2019) 055703.
- 4- S. Pratavieira, **F. Matroodi**, F. F. Pinto-Júnior, A. N. S. Rastelli, V. S. Bagnato, F. E. G. Guimarães, "Effectiveness of Partially Soluble

- Photosensitizer in Photodynamic Microbiological Inactivation: A Curcumin Example", *Medical Laser Applications and Laser-Tissue Interactions VIII Proc. of SPIE-OSA*, 10417 (2017) 104170R-1.
- 5- **F. Matroodi**, M. G. Shoar, "Giant Magnetoresistance in NiO/Co/Cu/Co/Ti spin valve fabricated by EBPVD", *IOP Conf. Series: Journal of Physics: Conf. Series*, 917 (2017) 072001.
 - 6- **F. Matroodi**, S. H. Tavassoli, "Experimental investigation on concurrent laser-induced breakdown spectroscopy Raman spectroscopy", *Applied Optics*, Vol. 54, Issue 3, pp. 400-407 (2015).
 - 7- **F. Matroodi**, S. H. Tavassoli, "Simultaneous Raman and laser-induced breakdown spectroscopy by a single set-up", *Applied Physics B*, Vol. 117, Issue 4, pp. 1081-1089 (2014).
 - 8- **F. Matroodi**, S. H. Tavassoli, "Simultaneous LIBS and Raman spectroscopy by a single laser pulse", Yerevan, Armenia, 2014.
 - 9- **F. Matroodi**, A. A. Heidari, H. Khadem, M. Rasouli, A. Safi and S. H. Tavassoli, "Analysis of minerals by combined LIBS and Raman spectroscopy", Jena, Germany, 2014.
 - 10- L. Salehi, I. Rasa, S. Alirezaie, **F. Matroodi**, S. H. Tavassoli, "Raman Spectroscopy and its application in Identification of Copper Deposits of Abbasabad, North-east of Shahrood", *Journal of Earth Science Researches*, 4th years, N. 13, Spring 2013, pp. 69-83.
 - 11- H. Soleimannejad, **F. Matroodi** and S. H. Tavassoli, "Raman Spectroscopy of Iran region calcite using pulsed laser: An approach of fluorescence suppression by time gating method", *Journal of Spectroscopy*, Vol. 2013, ID 254964 (2013).
 - 12- "Noises in Spectroscopy" Laser and Plasma Research Institute, Shahid Beheshti University, Tehran, Iran, 2013.
 - 13- "Combination of Raman spectroscopy and Laser-induced breakdown spectroscopy" Laser and Plasma Research Institute, Shahid Beheshti University, Tehran, Iran, 2010.
 - 14- "Surface Enhanced Raman Spectroscopy", Laser and Plasma Research Institute, Shahid Beheshti University, Tehran, Iran, 2010.
 - 15- "Magnetic Resistance", Laser and Plasma Research Institute, Shahid Beheshti University, Tehran, Iran, 2007.
 - 16- "Fiber Lasers", Laser and Plasma Research Institute, Shahid Beheshti University, Tehran, Iran, 2006.
 - 17- **F. Matroodi**, H. Soleimannejad, S. H. Tavassoli, "Raman Spectroscopy of Chemical liquids by Use of a Pulsed Laser", The 18th Iranian Conference on Optics and Photonics and the fourth Iranian Conference on Photonics Engineering, Tabriz, Iran, 2011.
 - 18- **F. Matroodi**, R. Entezari zarch, H. Soleimannejad, S. H. Tavassoli, "Laser-induced fluorescence spectroscopy in natural Calcite (Iran)", The 19th Iranian Conference on Optics and Photonics and the fifth Iranian Conference on Photonics Engineering, Zahedan, Iran, 2012.
 - 19- **F. Matroodi**, S. H. Tavassoli, "Investigation of stimulated Raman spectroscopy in cyclohexane", The 21th Iranian Conference on Optics and

Photonics and the 6th Iranian Conference on Photonics Engineering, Tehran, Iran, 2014.

20- **F. Matroodi**, S. H. Tavassoli, M. Sharafkhani, “Determination of organic gases by atomic spectroscopy”, The 17th Iranian Conference on Optics and Photonics and the third Iranian Conference on Photonics Engineering, Mahan, Iran, 2010.

7. LANGUAGES

- Arabic (mother tongue)
- Farsi (native)
- English (good in reading and writing, and speaking)
- Spanish (elementary)
- French (elementary)

8. SKILLS

- Microsoft Office Word, PowerPoint, Excel (good)
- EndNote Program (good)
- CorelDRAW Graphics Suite (good)
- Kestrelspec for Echelles (good)
- OriginProgram (good)
- Teaching (Laser, Optics, Physics, Mathematics, Geometry)
- Cooking (good)

8. HOBBIES

- Travel
- Painting
- Drawing
- Yoga
- Hiking
- Music (Santur)
- Origami