

Curriculum Vitae

Fatemeh Mohandes

Title: Postdoctoral Researcher

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1. Education

➤ **2002-2006: BSc:** Applied Chemistry, University of Kashan, Kashan, Iran.

➤ **2007-2009: MSc:** Inorganic Chemistry, University of Kashan, Kashan, Iran.

Thesis subject: *The preparation and characterization of metal oxide nanomaterials (PbO, MgO, Mn₂O₃, Co₃O₄ and NiO) via a thermal decomposition process from oxalate and phthalate complexes.*

Supervisor: Prof. Masoud Salavati-Niasari

➤ **2009-2014: PhD:** Inorganic Chemistry, University of Kashan, Kashan, Iran.

Thesis subject: *Synthesis and characterization of hydroxyapatite nanostructures in the presence of chelating ligands including O and N atoms.*

Supervisor: Prof. Masoud Salavati-Niasari

➤ **2014-2018: PostDoc:** Nano-biomaterials, Tissue engineering, Drug delivery, Superhydrophobic coatings

Supervisor: Prof. Abdolreza Simchi (www.cnam.ir)

2. Research Experience

Statistics

<i>Publications (ISI)</i>	47
<i>H-index</i>	20
<i>Citations</i>	1217

Awards & Grants

1. Top Cited Papers for 2011 and 2012, Chemical Engineering Journal (ELSEVIER)
2. Distinguished researcher of University of Kashan (2009)
3. Distinguished researcher of Iranian's Nanotechnology Community (2008)
4. Khwariazmi Prize; 19th Young Khwariazmi Prize, 2017

Skills & Activities

Skills Tissue Engineering, Nanobiotechnology, Bioactive Nanocomposites, Quantum Dots, Surfactants, Electron Microscopy, Nanoparticle Synthesis, Nanomaterials Synthesis, Material Characteristics, Nanoparticle Interactions with Biological Objects, Superhydrophobic & self-cleaning coatings.

Languages English, Deutsch

Computer Skills Hyperchem, ISIS Draw, Gaussian, EndeNote, Origin, Design Expert (DFT), X Pert for X-ray analysis

Journal Referee

- I. Materials Science and Engineering: C (Elsevier, I.F = 4.164)
- II. Coordination Chemistry Reviews (Elsevier, I.F = 13.324)

- III. Journal of Cluster Science (Springer, I. F. = 1.356)
- IV. Journal of Materials Science: Materials in Electronics (Springer, I. F. = 1.966)

3. Publication Highlights

❖ Books

Book Chapter

1. Salavati-Niasari, M., **Mohandes, F.**: *From Zeolite to Host-Guest Nanocomposite Materials*. Advances in Diverse Industrial Applications of Nanocomposites, Boreddy Reddy (Ed.), *ISBN: 978-953-307-202-9*

Available from: <http://www.intechopen.com/articles/show/title/from-zeoliteto-host-guest-nanocomposite-materials>; Source: *Advances in Diverse Industrial Applications of Nanocomposites*.

2. Ordikhani, F., **Mohandes, F.**, Simchi, A. (2017): *Nanostructured Coating for Biomaterials*. In: *Nanobiomaterials Science, Development and Evaluation*, Chapter 10, Elsevier.

❖ Patents

1. Simchi, A., **Mohandes, F.**, Mobarhan-Bonab, M.A. Self-cleaning superhydrophobic nanostructured paints, resins and coatings applied on different surfaces. Iran Patent, No 90208, 2016.

2. **Mohandes, F.**, Bakhtiar, H., Nekoofar, M.H., Ostad, S.N., Simchi, A. Extraction and fabrication of nano-sized hydroxyapatite with controlled size and morphology from bio-wastes and natural resources at low temperature for bone tissue engineering and tooth filling materials. Iran Patent, No. 92062

3. **Mohandes, F.**, Bakhtiar, H., Nekoofar, M.H., Ostad, S.N., Simchi, A. Extracting nanostructured hydroxyapatite compounds from natural resources and bio-wastes. Provisional US patent , (2017).

❖ Journal Publications

1. “Solvent-free preparation of copper ferrite microspheres composed of nanorods using a new coordination compounds as precursor”, M. Hashemi, **F. Mohandes**, S. Ahmadian-Fard-Fini, A. Sobhani, N. Shabany-Armaki, M. Salavati-Niasari, *J. Mater. Sci.: Mater. Electron.* 28 (2017) 11682-11688.
2. “Composites of Te nanorods and TeO₂ nanoparticles: chemical synthesis in an alkaline condition, characterization and photovoltaic measurements”, M. Panahi-Kalamuei, M. Salavati-Niasari, **F. Mohandes**, *J. Mater. Sci.: Mater. Electron.* 26 (2015) 3781–3786.
3. “Graphene Nanosheets: Thermal Treatment Synthesis and Characterization”, F. Tavakoli, M. Salavati-Niasari, **F. Mohandes**, *Synthesis and Reactivity in Inorganic, Metal-Organic, and Nano-Metal Chemistry*, 46 (2016), 877-882.
4. “Synthesis, characterization and photovoltaic studies of CuInS₂ nanostructures”, M. Salavati-Niasari, S. M. Hosseinpour-Mashkani, **F. Mohandes**, S. Gholamrezaei, *J. Mater. Sci.: Mater. Electron.* 26 (2015) 2810–2819.
5. “Preparation of cobalt ferrite micro/nanoparticles by solid-state thermal decomposition of a novel single-source precursor”, M. Hashemi, A. S. Esmaeily, **F. Mohandes**, M. Salavati-Niasari, *J. Mater. Sci.: Mater. Electron.* 26 (2015) 6860–6867.
6. “Effect of precursor, microwave power and irradiation time on the particle size of CuInS₂ nanoparticles”, M. Salavati-Niasari, S. M. Hosseinpour-Mashkani, **F. Mohandes**, *J. Mater. Sci.: Mater. Electron.* 26 (2015) 7936–7947.
7. “Hydrothermal synthesis of AgInS₂@Ag₂S nanocomposites by using Ag-carminic acid nanofibers as a novel precursor”, M. Mousavi-Kamazani, **F. Mohandes**, M. Salavati-Niasari, *J. Mater. Sci.: Mater. Electron.*, 2015, In Press.
8. “Preparation of Mn₂O₃ nanostructures with different shapes by a simple solid-state method”, **F. Mohandes**, M. Salavati-Niasari, M. Rezaei, *J. Mater. Sci.: Mater. Electron.* 26 (2015) 7013–7019.
9. “Green synthesis and characterization of graphene nanosheets”, F. Tavakoli, M. Salavati-Niasari, A. badiiei, **F. Mohandes**, *Mater. Res. Bull.* 53 (2015) 51–57.

10. "Graphene Nanosheets: Thermal treatment synthesis and characterization", F. Tavakoli, M. Salavati-Niasari, **F. Mohandes**, *Synthesis and Reactivity in Inorganic, Metal-Organic, and Nano-Metal Chemistry*, In press.
11. "Simple morphology-controlled fabrication of hydroxyapatite nanostructures with the aid of new organic modifiers", **F. Mohandes**, M. Salavati-Niasari, *Chem. Eng. J.* 252 (2014) 173-184.
12. "Particle size and shape modification of hydroxyapatite nanostructures synthesized via a complexing agent-assisted route", **F. Mohandes**, M. Salavati-Niasari, *Mater. Sci. Eng. C* 40 (2014) 288-298.
13. "Novel preparation of hydroxyapatite nanoparticles and nanorods with the aid of complexing agents", **F. Mohandes**, M. Salavati-Niasari, Z. Fereshteh, M.H. Fathi, *Ceram. Int.* 40 (2014) 12227–12233.
14. "Influence of morphology on the in vitro bioactivity of hydroxyapatite nanostructures prepared by precipitation method", **F. Mohandes**, M. Salavati-Niasari, *New Journal of Chemistry* 38 (2014) 4501-4509.
15. "Freeze-drying synthesis, characterization and in vitro bioactivity of chitosan/graphene oxide/hydroxyapatite nanocomposite", **F. Mohandes**, M. Salavati-Niasari, *RSC Advances* 38 (2014) 4501-4509.
16. "In vitro comparative study of pure hydroxyapatite nanorods and novel polyethylene glycol/graphene oxide/hydroxyapatite nanocomposite", **F. Mohandes**, M. Salavati-Niasari, *J. Nanopart. Res.* 16 (2014) 2604-2616.
17. "Hydroxyapatite nanocrystals: Simple preparation, characterization and 6 formation mechanism," **F. Mohandes**, M. Salavati-Niasari, M.H. Fathi, Z. Fereshteh, *Mater. Sci. Eng. C* 45 (2014) 29-36.

18. "Tellurium nanostructures: Simple chemical reduction synthesis, characterization and photovoltaic measurements", M. Panahi-Kalamuei, **F. Mohandes**, M. Mousavi-Kamazani, M. Salavati-Niasari, Z. Fereshteh, M.H. Fathi, *Mater. Sci. Semiconduct. Proc.* 27 (2014) 1028-1035.
19. "Synthesis and characterization of PbTe nanostructures in the presence of novel surfactants", S. Ahmadian-Fard-Fini, M. Salavati-Niasari, **F. Mohandes**, *Advanced Powder Technology* 25 (2014) 301–309.
20. "Synthesis and characterization of PbTe micro/nanostructures through hydrothermal method by using a novel capping agent", S. Ahmadian-Fard-Fini, M. Salavati-Niasari, **F. Mohandes**, *Bull. Mater. Sci.* 37 (2014) 1–7.
21. "AgSCN micro/nanostructures: Facile sonochemical synthesis, characterization, and photoluminescence properties", F. Soofivand, M. Salavati-Niasari, **F. Mohandes**, *J. Indust. Eng. Chem.* 20 (2014) 3780–3788.
22. "CuInS₂ nanostructures: Synthesis, characterization, formation mechanism and solar cell applications", S.M. Hosseinpour-Mashkani, M. Salavati-Niasari, **F. Mohandes**, *J. Indust. Eng. Chem.* 20 (2014) 3800–3807.
23. "Sonochemical preparation of pure *t*-LaVO₄ nanoparticles with the aid of tris(acetylacetonato)lanthanum hydrate as a novel precursor", M. Salavati-Niasari, L. Saleh, **F. Mohandes**, A. Ghaemi, *Ultrason. Sonochem.* 21 (2014) 653–662.
24. "Sonochemical synthesis and characterization of lead iodide hydroxide micro/nanostructures", F. Tavakoli, M. Salavati-Niasari, **F. Mohandes**, *Ultrason. Sonochem.* 21 (2014) 234–241.
25. "Synthesis and characterization of silver selenide nanoparticles via a facile sonochemical route starting from a novel inorganic precursor", M. Jafari, M. Salavati-Niasari, **F. Mohandes**, *J. Inorg. Organomet. Polym.* 23 (2013) 357-364.

26. "Novel precursor-assisted synthesis and characterization of zinc oxide nanoparticles/nanofibers", F. Soofivand, M. Salavat-Niasari, **F. Mohandes**, *Mater. Lett.* 98 (2013) 55-58.
27. "Green synthesis of flower-like CuI microstructures composed of trigonal nanostructures using pomegranate juice", F. Tavakoli, M. Salavati-Niasari, **F. Mohandes**, *Mater. Lett.* 100 (2013) 133-136.
28. "Sonochemical Synthesis of Silver Vanadium Oxide Micro/Nanorods: Solvent and Surfactant Effects", **F. Mohandes**, M. Salavati-Niasari, *Ultrason. Sonochem.* 20 (2013) 354–365.
29. "PbTe nanostructures: Microwave-assisted synthesis by using lead Schiff-base precursor, characterization and formation mechanism", S. Ahmadian-Fard-Fini, M. Salavati-Niasari, A. Monfared, **F. Mohandes**, *C. R. Chimie* 16 (2013) 778–788.
30. "Sonochemical and hydrothermal synthesis of PbTe nanostructures with the aid of a novel capping agent", S. Ahmadian-Fard-Fini, M. Salavati-Niasari, **F. Mohandes**, *Mater. Res. Bulletin* 48 (2013) 4332–4338.
31. "CuInS₂ nanoparticles: Microwave-assisted synthesis, characterization, and photovoltaic measurements", S. M. Hosseinpour-Mashkani, M. Salavati-Niasari, **F. Mohandes**, K. Venkateswara-Rao, *Mater. Sci. Semiconduct. Proc.* 16 (2013) 390–402.
32. "Solvothermal Synthesis and Characterization of PbSe Nanostructures with the Aid of Schiff-base Ligand", M. Salavati-Niasari, B. Shoshtari-Yeganeh, **F. Mohandes**, *J. Clust. Sci.* 24 (2013) 657–667.
33. "Schiff-base assisted synthesis of lead selenide nanostructures", M. Salavati-Niasari, B. Shoshtari-Yeganeh, **F. Mohandes**, *Mater. Res. Bulletin* 48(2013)1745–1752.
34. "Application of a new coordination compound for the preparation of AgI nanoparticles", **F. Mohandes**, M. Salavati-Niasari, *Mater. Res. Bulletin* 48 (2013) 3773–3782.

35. "Silver chromate and silver dichromate nanostructures: Sonochemical synthesis, characterization, and photocatalytic properties", F. Soofivand, **F. Mohandes**, M. Salavati-Niasari, *Mater. Res. Bulletin* 48 (2013) 2084–2094.
36. "Self-assembly of cubic-like nanostructures to form star-like lead sulfate microstructures", M. Salavati-Niasari, M. Ranjbar, **F. Mohandes**, *Micro Nano Lett.* 7 (2012) 581–584.
37. "Microwave-assisted synthesis and photovoltaic measurements of CuInS₂ nanoparticles prepared by using metal-organic precursors", S.M. Hosseinpour-Mashkani, **F. Mohandes**, M. Salavati-Niasari, K. Venkateswara-Rao, *Mater. Res. Bulletin* 47 (2012) 3148–3159.
38. "Simple and facile synthesis of Ag₂CrO₄ and Ag₂Cr₂O₇ micro/nanostructures using a silver precursor", *Micro Nano Lett.* 7 (2012) 283–286.
39. "Modified single-phase hematite nanoparticles via a facile approach for large-scale synthesis", E. Esmaeili, M. Salavati-Niasari, **F. Mohandes**, F. Davar, H. Seyghalkar, *Chem. Eng. J.* 170 (2011) 278–285.
40. "The production of nickel(hydro)oxide nanostructures via the thermolysis of metal-organic frameworks", **F. Mohandes**, F. Davar, M. Salavati-Niasari, K. Saberyan, *Current Nanoscience* 2 (2011) 260–266
41. "A novel chelating acid-assisted thermolysis procedure for preparation of tin oxide nanoparticles", F. Davar, **F. Mohandes**, M. Salavati-Niasari, *Polyhedron* 29 (2010) 3132–3136.
42. "Magnesium oxide nanocrystals via thermal decomposition of magnesium oxalate", **F. Mohandes**, F. Davar, M. Salavati-Niasari, *J. Phys. Chem. Solids* 71 (2010) 1623–1628.

43. Preparation of Co_3O_4 nanoparticles by nonhydrolytic thermolysis of $[\text{Co}(\text{Pht})(\text{H}_2\text{O})]_n$ polymers", **F. Mohandes**, F. Davar, M. Salavati-Niasari, *J. Magen. Magen. Mater.* 322 (2010) 872–877.
44. "Synthesis and characterization manganese oxide nanobundles from decomposition of manganese oxalate", F. Davar, **F. Mohandes**, M. Salavati-Niasari, *Inorg. Chim. Acta* 362 (2009) 3663–3668.
45. "Preparation of PbO nanocrystals via decomposition of lead oxalate", M. Salavati-Niasari, **F. Mohandes**, F. Davar, *Polyhedron* 28 (2009) 2263–2267.
46. "Preparation of NiO nanoparticles from metal-organic frameworks via a solid-state decomposition route" M. Salavati-Niasari, **F. Mohandes**, F. Davar, M. Mazaheri, M. Monemzadeh, N. Yavarinia, *Inorg. Chim. Acta* 362 (2009) 3691–3697.
47. "Fabrication of chain-like Mn_2O_3 nanostructures via thermal decomposition of manganese phthalate coordination polymers", M. Salavati-Niasari, **F. Mohandes**, F. Davar, K. Saberian, *Appl. Surf. Sci.* 256 (2009) 1476–1480.

❖ International Conference Proceedings

- 1." Template synthesis and catalytic oxidation of macrocycle nickel(II) complex nanoparticles entrapped zeolite-Y, **F. Mohandes**, M. Salavati-Niasari, F. Davar, XIth Netherlands Catalysis and Chemistry Conference, 1-3 March 2010.
- 2." The preparation and characterization of Mn_2O_3 nanostructures via a solid-state decomposition route", **F. Mohandes**, M. Salavati-Niasari, ICNN 2010, Shiraz University.
- 3." Synthesis and Characterization of AgVO_3 Nanorods", **F. Mohandes**, M. Salavati-Niasari, ICNN 2012, University of Kashan, 8-10 September.
- 4." Fabrication and Characterization of Tetragonal LaVO_4 Nanoparticles", L. Saleh, M. Salavati-Niasari, A. Ghaemi, **F. Mohandes**, ICNN 2012, University of Kashan, 8-10 September.

- 5." Investigation of Luminescent Properties of Lanthanum Orthovanadate Nanoparticles", L. Saleh, M. Salavati-Niasari, A. Ghaemi, **F. Mohandes**, ICNN 2012, University of Kashan, 8-10 September.
- 6." Synthesis and Characterization of Silver Chromate Nanostructures by a Simple Precipitation Route", F. Soofivand, M. Salavati-Niasari, **F. Mohandes**, ICNN 2012, University of Kashan, 8-10 September.
- 7." Synthesis and characterization of silver iodide nanoparticles", **F. Mohandes**, M. Salavati-Niasari, IBCN 12, Minsk Belarus, 27-29 June 2012.
8. "Influence of morphology on the in-vitro bioactivity of hydroxyapatite nanostructures synthesized in the presence of chelating ligands", **F. Mohandes**, M. Salavati-Niasari, ICNN2014, 22-24 October 2014, Tehran, Iran.

References:

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