Curriculum Vitae

Fatemeh Mohandes

Title: Postdoctoral Researcher

Affiliation: Department of Material Science and Engineering, Sharif University of Technology, Tehran, Iran

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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, Mn_2O_3, Co_3O_4 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

- **2014-2019: PostDoc:** *Electrochemical sensing; Nano-biomaterials; Tissue engineering; Nanostructured materials.*

- Supervisor: Prof. Abdolreza Simchi

2. Research Experience

Statistics

Publications (ISI)	50
H-index	22
Citations	1740

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; 19 th Young Khwariazmi Prize, 2017

Skills & Activities

Skills	Nanomaterials synthesis, Tissue Engineering, Nanobiotechnology, Bioactive Nanocomposites, Quantum Dots, Surfactants, Electron Microscopy, Material Characteristics, Nanoparticle Interactions with Biological Objects, Superhydrophobic & self-cleaning coatings.
Languages	English, Deutsch
Computer Skills	ISIS Draw, EndeNote, Origin, X Pert for X-ray analysis

Journal Referee

I. Materials Science and Engineering: C

II. Coordination Chemistry Reviews

III. Journal of Cluster Science

IV. Journal of Materials Science: Materials in Electronics

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. Preparing Hydroxyapatite Nanostructures. US patent , (2019).

❖ Journal Publications

1. Extraction of Hydroxyapatite Nanostructures from Marine Wastes for the Fabrication of Biopolymer-Based Porous Scaffolds, H. Gheysari, **F. Mohandes**, M. Mazaheri, B. Dolatyar, M. Askari, A. Simchi, *Marine Drugs,* 18 (2020) 26.

2. Glucose cross-linked hydrogels conjugate HA nanorods as bone scaffolds: Green synthesis, characterization and *in vitro* studies, F. Mazaheri Karvandian, N. Shafiei, **F. Mohandes,** B. Dolatyar, N. Zandi, B. Zeynali, A. Simchi, *Materials Chemistry and Physics,* 242 (2020) 122515.

3. "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.

4. "Composites of Te nanorods and TeO_2 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.

5. "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.

6. "Synthesis, characterization and photovoltaic studies of $CuInS_2$ nanostructures", M. Salavati-Niasari, S. M. Hosseinpour-Mashkani**,** **F. Mohandes,** S. Gholamrezaei, *J. Mater. Sci.: Mater. Electron.* 26 (2015) 2810–2819.

7. "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.

8. "Effect of precursor, microwave power and irradiation time on the particle size of $CuInS_2$ nanoparticles", M. Salavati-Niasari, S. M. Hosseinpour-Mashkani**, F. Mohandes**, *J. Mater. Sci.: Mater. Electron.* 26 (2015) 7936–7947.

9. "Hydrothermal synthesis of $AgInS_2$@Ag_2S 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.

10. "Preparation of Mn_2O_3 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.

11. "Green synthesis and characterization of graphene nanosheets", F. Tavakoli, M. Salavati-Niasari, A. badiei, **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. "$CuInS_2$ 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*-$LaVO_4$ 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. “$CuInS_2$ 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, andphotocatalyticproperties”, 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 $CuInS_2$ 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 Ag_2CrO_4 and $Ag_2Cr_2O_7$ 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 nnostructures 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 $[Co(Pht)(H_2O)]_n$ 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 slid-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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