Azam Sobhani

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Professional Interests:

Nanomaterials
Nanostructures
Nanocomposites
Nanocrystals
Synthesis of nanomaterials
Photocatalyst

Education

1. B. S., Chemistry, Kharazmi University, 2006
2. M. S., Inorganic Chemistry, University of Kashan, 2008
3. Ph. D., Inorganic Chemistry, University of Kashan, 2013

Honors & Awards

1. The best Research student of the year award from Kashan University, 2012
2. The best Researcher of the year in North Khorasan Province, the 14th selection of advanced researchers festival, 2013
3. The active researcher of the Kosar university of Bojnord, 2018
4. Editorial board membership of same journals
5. The best researcher of the Kosar university of Bojnord, 2019
6. The best researcher of the year in the basic sciences in North Khorasan Province, 2019
7. The researcher with the highest H-Index in Kosar university of Bojnord, 2021
8. Highly cited researcher and top 2% researcher of the world, 2023
9. The best researcher of the year in the basic sciences in North Khorasan Province, 2024
10. The best researcher of the Kosar university of Bojnord, 2024
11. The researcher with the highest H-Index in Kosar university of Bojnord, 2024
12. h-index = 37
13. ~70 research works (JCR articles) more than 4000 citations

Teaching Experience (2013-up to now)

1. General Chemistry (I) and (II)
2. Inorganic Chemistry (I) , (II) and (III)
3. Nanochemistry
4. Scientific texts of chemistry
5. Synthesis of nanomaterials (M. Sc.)
6. Inorganic nanomaterials (M. Sc.)

Publications:

1. M. Salavati-Niasari, **A. Sobhani**, Ship-in-a-bottle synthesis, characterization and catalytic oxidation of cyclohexane by host (nanopores of zeolite-Y)/guest (Mn(II), Co(II), Ni(II) and Cu(II) complexes of bis(salicyaldehyde)oxaloyldihydrazone) nanocomposite materials, J. Mol. Catal. A 285 (2008) 58–67.
2. M. Salavati-Niasari, **A. Sobhani**, F. Davar, Synthesis of star-shaped PbS nanocrystals using single-source precursor, J. Alloys Compd. 507 (2010) 77–83.
3. **-A. Sobhani**, F. Davar, M. Salavati-Niasari, Synthesis and characterization of hexagonal nano-sized nickel selenide by simple hydrothermal method assisted by CTAB, Appl. Sur. Sci. 257 (2011) 7982–7987.
4. **-A. Sobhani**, M. Salavati-Niasari, F. Davar, Shape control of nickel selenides synthesized by a simple hydrothermal reduction process, Polyhedron 31 (2012) 210–216 **(Top Cited for 2012–2013).**
5. M. Salavati-Niasari, **A. Sobhani**, Single-source molecular precursor for synthesis of CdS nanoparticles and nanoflowers, High Temp. Mater. Processes 31 (2012) 157–162.
6. **-A. Sobhani**, M. Salavati-Niasari, Facile hydrothermal synthesis of $CoSO_4.H_2O$ nanoparticles and barite microcubes from novel precursors, High Temp. Mater. Processes 31 (2012) 711–715.
7. M. Esmaeili-Zarea, M. Salavati-Niasari, **A. Sobhani**, Simple sonochemical synthesis and characterization of HgSe nanoparticles, Ultrason. Sonochem. 19 (2012) 1079–1086.
8. **-A. Sobhani**, M. Salavati-Niasari, Sodium dodecyl benzene sulfonate-assisted synthesis through a hydrothermal reaction, Mater. Res. Bull. 47 (2012) 1905–1911
9. **-A. Sobhani**, M.Salavati-niasari, M. Sobhani, Synthesis, characterization and optical properties of mercury sulfides and zinc sulfides using single-source precursor, Mater. Sci. Semicond. Process. 16 (2013) 410−417.
10. **-A. Sobhani**, M. Salavati-Niasari, S.M. Hosseinpour-Mashkani, Single-source molecular precursor for synthesis of copper sulfide nanostructures, J. Cluster Sci. 23 (2012) 1143−1151.
11. -M. Salavati-Niasari, M. Esmaeili-Zare, **A. Sobhani**, Synthesis and characterization of cadmium selenide nanostructures by simple sonochemical method, Micro & Nano Lett. 7 (2012) 831−834.
12. -M. Salavati-Niasari, **A. Sobhani**, Effect of nickel salt precursors on morphology, size, optical property and type of products (NiSe or Se) in hydrothermal method, Opt. Mater. 35 (2013) 904–909.
13. -M. Salavati-Niasari, M. Esmaeili-Zare, **A. Sobhani**, Cubic HgSe nanoparticles: sonochemical synthesis and characterization, Micro & Nano Lett. 7 (2012) 1300−1304.
14. **-A. Sobhani**, M. Salavati-Niasari, Synthesis, characterization, optical and magnetic properties of a nickel sulfide series by three different methods, Superlattices Microstruct. 59 (2013) 1−12.

15. **-A. Sobhani**, M. Salavati-Niasari, Morphological control of $MnSe_2$/Se nanocomposites by amount of hydrazine through a hydrothermal process, Mater. Res. Bull. 48 (2013) 3204−3210.
16. -Z. Shahri, **A. Sobhani**, M. Salavati-Niasari, Controllable synthesis and characterization of cadmium molybdate octahedral nanocrystals by coprecipitation method, Mater. Res. Bull. 48 (2013)3901−3909.
17. -M. Jafari, M. Salavati-Niasari, **A. Sobhani**, Silver selenide nanoparticles: synthesis, characterization and effect of preparation conditions under ultrasound radiation, Micro & Nano Lett. 8 (2013) 508−511.
18. **-A. Sobhani**, M. Salavati-Niasari, Synthesis and characterization of a nickel selenide series via a hydrothermal process, Superlattices Microstruct. 65 (2014) 79−90.
19. -M. Salavati-Niasari, **A. Sobhani**, S. khoshrooz, N. Mirzanasiri, Preparation and characterization of PbS nanoparticles via cyclic microwave radiation using precursor of lead (II) oxalate, J. Cluster Sci. 25 (2014) 937−947.
20. **-A. Sobhani**, M. Salavati-Niasari, Synthesis and characterization of CdSe nanosturctures by using a new selenium source: Effect of hydrothermal preparation conditions, Mater. Res. Bull. 53 (2014) 7−14.
21. -M. Esmaeili-Zare, M. Salavati-Niasari, **A. Sobhani**, Sonochemical synthesis of HgSe nanoparticles: Effect of metal salt, reaction time and reductant agent, J. Ind. Eng. Chem. 20 (2014) 3518−3523.
22. -M. Jafari, **A. Sobhani**, M. Salavati-Niasari, Effect of preparation conditions on synthesis of Ag_2Se nanoparticles by simple sonochemical method assisted by thiourea, J. Ind. Eng. Chem. 20 (2014) 3775−3779.
23. **-A. Sobhani**, M. Salavati-Niasari, A new simple route for the preparation of nanosized copper selenides under different conditions, Ceram. Int. 40 (2014) 8173−8182.
24. **-A. Sobhani**, M. Salavati-Niasari, Hydrothermal synthesis, characterization, and magnetic properties of cubic $MnSe_2$/Se nanocomposites material, J. Alloys Compd. 617 (2014) 93−101.
25. **-A. Sobhani**, M. Salavati-Niasari, A Polyethylene Glycol-assisted Hydrothermal Synthesis of $FeSe_2$ Nanoparticles and $FeSe_2$/FeO(OH) Nanocomposites, J. Alloys Compd. 625 (2015) 26−33.
26. -F. Ansari, **A. Sobhani**, M. Salavati-Niasari, Sol-gel auto-combustion synthesis of $PbFe_{12}O_{19}$ using maltose as a novel reductant, RSC Adv. 4 (2014) 63946−63950.
27. **-A. Sobhani**, M. Salavati-Niasari, CdSe nanoparticles: Facile hydrothermal synthesis, characterization and optical properties, J. Mater. Sci.: Mater. Electron. 26 (2015) 6831−6836.
28. **-A. Sobhani**, M. Salavati-Niasari, Optimized synthesis of ZnSe nanocrystals by hydrothermal method, J. Mater. Sci.: Mater. Electron. 27 (2016) 293−303.

29. -F. Ansari, **A. Sobhani**, M. Salavati-Niasari, $PbTiO_3/PbFe_{12}O_{19}$ nanocomposites: Green synthesis through an eco-friendly approach, Composites Part B. 85 (2016) 170−175.
30. -F. Ansari, **A. Sobhani**, M. Salavati-Niasari, Facile synthesis, characterization and magnetic property of $CuFe_{12}O_{19}$ nanostructures via a sol-gel auto-combustion process, J. Mag. Mag. Mater. 401 (2016) 362−369.
31. **-A. Sobhani**, M. Salavati-Niasari, Synthesis of Co_2P/Co nanocomposites using single source precursor by thermal decomposition method, J. Mater. Sci.: Mater. Electron. 27 (2016) 3271−3280.
32. **-A. Sobhani**, M. Salavati-Niasari, Simple synthesis and characterization of nickel phosphide nanostructures assisted by different inorganic precursors, J. Mater. Sci.: Mater. Electron. 27 (2016) 3619−3627.
33. -F. Ansari, **A. Sobhani**, M. Salavati-Niasari, Green synthesis of magnetic chitosan nanocomposites by a new sol-gel auto-combustion method, J. Mag. Mag. Mater. 410 (2016) 27−33.
34. **-A. Sobhani**, M. Salavati-Niasari, Cobalt selenide nanostructures: Hydrothermal synthesis, considering the magnetic property and effect of the different synthesis conditions, J. Mol. Liq. 219 (2016) 1089−1094.
35. **-A. Sobhani**, M. Salavati-Niasari, Hydrothermal synthesis of CoSe nanostructures without using surfactant, J. Mol. Liq. 220 (2016) 334–338.
36. -S. Bayat, **A. Sobhani**, M. Salavati-Niasari, Co_2SiO_4 nanostructures: New simple synthesis, characterization and investigation of optical property, Mater. Res. Bull. 88 (2017) 248−257.
37. S.R. Yousefi, **A. Sobhani**, M. Salavati-Niasari, A new nanocomposite superionic system ($CdHgI_4/HgI_2$): synthesis, characterization and experimental investigation, Adv. Powder Tech. 28 (2017) 1258–1262.
38. -M. Hashemi, F. Mohandes, S. Ahmadian-Fard-Finia, **A. Sobhani**, N. Shabani-Armaki, M. Salavati-Niasari, Solvent-free preparation of copper ferrite microspheres composed of nanorods using a new coordination compound as precursor, J. Mater. Sci.: Mater. Electron. 28 (2017) 11682–11688.
39. M. Mahdiani, **A. Sobhani**, M. Salavati-Niasari, Enhancement of magnetic, electrochemical and photocatalytic properties of lead hexaferrites with coating graphene and CNT: Sol-gel auto-combustion synthesis by valine, Sep. Pur. Tech. 185 (2017) 140−148
40. H. Emadi, M. Salavati-Niasari, **A. Sobhani**, Synthesis of some transition metal (M: 25Mn, 27Co, 28Ni, 29Cu, 30Zn, 47Ag, 48Cd) sulfide nanostructures by hydrothermal method, Adv. Col. Int. Sci. 246 (2017) 52–74.
41. S. Bayat; **A. Sobhani**; M. Salavati-Niasari, Simple sol-gel green auto combustion synthesis by using carbohydrate sugars as a novel reducing agent, characterization, photocatalytic behavior and slow-

burning property of Ni_2SiO_4 nanocomposites, J. Mater. Sci.: Mater. Electron. 28 (2017) 16981–16991.

42. **A. Sobhani**, M. Salavati-Niasari, Chromium selenide nanoparticles: hydrothermal synthesis in the presence of a new selenium source, J Nanostruct 7 (2017) 141−146.
43. M. Mahdiani; **A. Sobhani**; F. Ansari; M. Salavati-Niasari, Lead hexaferrite nanostructures: Green amino acid sol-gel auto-combustion synthesis, characterization and considering magnetic property, J. Mater. Sci.: Mater. Electron 28 (2017) 17627–17634.
44. F. Ansari, **A. Sobhani**, M. Salavati-Niasar, Simple sol-gel synthesis and characterization of new $CoTiO_3/CoFe_2O_4$ nanocomposite by using liquid glucose, maltose and starch as fuel, capping and reducing agents. J. Colloid Interface Sci. 514 (2018) 723–732.
45. S. Bayat, **A. Sobhani**, M. Salavati-Niasari, Co_2SiO_4 nanostructures/nanocomposites: Synthesis and investigations of optical, magnetic, photocatalytic, thermal stability and flame retardant properties, J. Mater. Sci.: Mater. Electron, 29 (2018) 7077–7089.
46. R. Mohassel, **A. Sobhani**, M. Goudarzi, M. Salavati-Niasari, Amino acid modified combustion synthesis, characterization and investigation of magnetic, optical and photocatalytic properties of Gd_2CoMnO_6 nanostructures, J. Alloys Compd. 753 (2018) 615–621.
47. R. Mohassel, **A. Sobhani**, M. Salavati-Niasari, M. Goudarzi, Pechini synthesis and characteristics of Gd_2CoMnO_6 nanostructures and its structural, optical and photocatalytic properties, Spectrochim. Acta, Part A, 204 (2018) 232−240.
48. S. Zinatloo-Ajabshir, M. Salavati-Niasari, **A. Sobhani**, Z. Zinatloo-Ajabshir, Rare earth zirconate nanostructures: Recent development on preparation and photocatalytic applications, J. Alloys Compd. 767 (2018) 1164−1185.
49. R. Mohassel, **A. Sobhani**, M. Salavati-Niasari, Investigation of photocatalytic, electrochemical, optical and magnetic behaviors of rare-earth double perovskites using combustion synthesized Gd2NiMnO6 nanostructures in the presence of different saccharides, Int. J. Hydrogen Energy 44 (2019) 860−869.
50. M. Mahdiani, **A. Sobhani**, M. Salavati-Niasari, The first synthesis of CdFe12O19 nanostructures and nanocomposites and considering of magnetic, optical, electrochemical and photocatalytic properties, J. Hazard. Mater. 367 (2019) 607−619.
51. Z. Asgari Fard, **A. Sobhani**, R. Monsef, M. Salavati-Niasari, Lead carbonate hydroxide nanostructures: a new hydrothermal synthesis in the presence of ethylenediamine and hydrazine and investigation photocatalytic behavior, J. Mater. Sci.: Mater. Electron. 30 (2019) 20947–20957.

52. R. Mohassel, M. Amiri, A.K. Abbas, **A. Sobhani**, M. Ashrafi, H. Moayedi, M. Salavati-Niasari, Pechini synthesis using propylene glycol and various acid as stabilizing agents and characterization of Gd2NiMnO6 ceramic nanostructures with good photocatalytic properties for removal of organic dyes in water. J. Mater. Res Technol. 9 (2020) 1720–1733

۵۳. سنتز و شناسایی نانوکامپوزیت باریم هگزافریت با کاهنده ی جدید و بررسی خاصیت مغناطیسی و فوتوکاتالیزوری، اعظم سبحانی، مهین بلدی ۴۰، ۱۴۰۰، ۳۳-۲۷

54. Y. Orooji, R. Mohassel, O. Amiri, **A. Sobhani**, M. Salavati-Niasari, Gd2ZnMnO6/ZnO nanocomposites: Green sol-gel auto-combustion synthesis,characterization and photocatalytic degradation of different dye pollutants in water. J. Alloys Compd. 835 (2020) 155240.
55. F.S. Razavi, **A. Sobhani**, O. Amiri, M. Ghiyasiyan-Arani, M. Salavati-Niasari, Green sol-gel auto-combustion synthesis, characterization and investigation of the electrochemical hydrogen storage properties of barium cobalt oxide nanocomposites with maltose. Int. J. Hydrogen Energy 45(2020) 17662−17670.
56. **A. Sobhani**, M. Salavati-Niasari, Transition metal selenides and diselenides: Hydrothermal fabrication, investigation of morphology, particle size and and their applications in photocatalyst. Advances in Colloid and Interface Science.
57. S.R. Yousefi, **A. Sobhani**, H.A. Alshamsi, M. Salavati-Niasari, Green sonochemical synthesis of BaDy2NiO5/Dy2O3 and BaDy2NiO5/NiO nanocomposites in the presence of core almond as a capping agent and their application as photocatalysts for the removal of organic dyes in water. RSC Adv. 11(2021) 11500.
58. **A. Sobhani**, Hydrothermal synthesis of CuMn2O4/CuO nanocomposite without capping agent and study its photocatalytic activity for elimination of dye pollutions, Int. J. Hydrogen Energy, 47 (2022) 20138–20152.
59. **A. Sobhani**, Mn/Cu/O/ chitosan nanocomposites: hydrothermal synthesis, characterization, and its application for adsorptive removal of methylene blue from wastewater. J Nanostruct 12 (2022) 746–753.
60. **A. Sobhani**, S. Alinavaz, Co-precipitation synthesis of CuMn2O4/CuMnO nanocomposites without capping agent and investigation of their applications for removing pollutants from wastewater. Biomass Conversion and Biorefinery 14 (2024) pages 28901–28911.
61. M. Samadi-Kazemi, **A. Sobhani**, CuMn2O4/chitosan micro/nanocomposite: Green synthesis, methylene blue removal, and study of kinetic adsorption, adsorption isotherm experiments, mechanism and adsorbent capacity, Arabian Journal of chemistry, 16 (2023) 104754–104766.

62. CuMn2O4/Mn2O3 micro composites: sol- gel synthesis in the presence of sucrose and investigation of their photocatalytic properties, **A. Sobhani**, Arabian Journal of Chemistry, 16 (2023) 105201.
63. Nickel and cadmium sulfide/chitosan nanocomposites: synthesis, characterization and applications, **A. Sobhani**, Journal of Nanostructures 13 (4), 902-914.
64. ZnMn2O4 nanostructures: synthesis via two different chemical methods, characterization, and photocatalytic applications for the degradation of new dyes, **A. Sobhani**, S. Alinavaz, Heliyon 9 (2023) e21979.
65. Synthesis and characterization of Fe2SiO4/Fe2O3/g-C3N4 ternary heterojunction photocatalyst with enhanced photocatalytic activity under visible light, M. Hosseini, M. Ghanbari, A.H. Alzaidy, E.A. Dawi, M.A. Mahdi, L.S. Jasim, **A. Sobhani**, M. Salavati-Niasari, Int. J. Hydrogen Energy 60 (2024) 1370–1382.
66. Ni/MnO/chitosan nanocomposites: Synthesis, characterization and investigation of photocatalytic applications for degradation of malachite green, **A. Sobhani**, J. Mater. Sci.: Mater. Electron. 35 (2024) 673.
67. Multidisciplinary synthesis of Ca-Mn-O nanostructures and optimization for electrochemical hydrogen storage, M. Ghiyasiyan-Arania, **A. Sobhani**, Int. J. Hydrogen Energy 111 (2025) 798–807.