IN THE NAME OF GOD

1- Personal details

Name: Farhad Heidary

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2- Education

B. Sc. (Applied Chemistry) Arak University, Arak, Iran, 2008

M.Sc. (Applied Chemistry) Razi University, Kermanshah, Iran, 2010

Ph.D. (Applied Chemistry) University of Tehran, Tehran, Iran, 2015

3- Research

- Membrane processes
- Membrane characterization
- Separation technology
- Nano-technology
- Water treatment

4- Publications

[1] **Book:**

- Ceramic Membranes for Separation and Reaction, *Published by Arak University*, 2019.

[2] **ISI Articles:**

- Sayed Siavash Madaeni and **Farhad Heidary**, Improving separation capability of regenerated cellulose ultrafiltration membrane by surface modification, *Applied Surface Science*, 257 (2011) 4870–4876.

- Sayed Siavash Madaeni and **Farhad Heidary**, Effect of surface modification of microfiltration membrane on capture of toxic heavy metal ions, *Environmental Technology*, 33 (2012), 393–399.

- Ehsan Salehi, Sayed Siavash Madaeni and **Farhad Heidary**, Dynamic adsorption of Ni(II) and Cd(II) ions from water using 8-hydroxyquinoline ligand immobilized PVDF membrane: Isotherms, thermodynamics and kinetics, *Separation and Purification Technology*, 94 (2012) 1-8.

- Sayed Siavash Madaeni, **Farhad Heidary** and Ehsan Salehi, Co- adsorption/filtration of heavy metal ions from water using regenerated cellulose UF membranes modified with DETA ligand, *Separation Science and Technology*, 48 (2013) 1308–1314.

- **Farhad Heidary**, Ali Nemati Kharat and Ali Reza Khodabakhshi, Preparation, Characterization and Transport Properties of Novel Cation-Exchange Nanocomposite Membrane Containing $BaFe_{12}O_{19}$ Nanoparticles, *Journal of Cluster Science*, 27 (2016), 193-211.

- **Farhad Heidary,** Ali Reza Khodabakhshi and Ali Nemati Kharat, Synthesis, characterization and transport properties of novel ion-exchange nanocomposite membrane containing in-situ formed ZnO nanoparticles, *Journal of Nanostructures*, 5 (2015) 19-25.

- **Farhad Heidary,** Ali Reza Khodabakhshi and Ali Nemati Kharat, Novel ion-exchange nanocomposite membrane containing in-situ formed FeOOH nanoparticles: Synthesis, characterization and transport properties, *Korean J. Chem. Eng*, 33 (2016) 1380-1390.

- Behrouz Heidari, Maryam Ansari and **Farhad Heidary**, The effect of ZnO, Fe_3O_4 and graphene oxide nanostructures on the microwave absorbing properties of polystyrene composites, *Journal of Materials Science: Materials in Electronics*, 28 (2017) 1028-1037.

- **Farhad Heidary**, Ali Nemati Kharat, Alireza Khodabakhshi and Sayed Siavash Madaeni, Influence of preparation procedure and ferric oxide nanoparticles addition on transport properties of homogeneous cation-exchange SPPO/SPVC membrane, *Bulletin of Materials Science*, 40 (2017) 631–644.

- **Farhad Heidary**, Ali Reza Khodabakhshi and Davood Ghanbari, A novel sulfonated poly phenylene oxide-poly vinylchloride/ZnO cation-exchange membrane applicable in refining of saline liquids, *Journal of Cluster Science*, 28 (2017) 1489-1507.

- N. Abdali, A. Marjani, **F. Heidary** and M. Adimi, Fabrication of PVA coated PES/PVDF nanocomposite membrane embedded with in-situ formed magnetite nanoparticles for removal of metal ions from aqueous solutions, *New Journal of Chemistry*, 41 (2017) 6405-6414.

- Ali Reza Khodabakhshi, **Farhad Heidary** and Davood Ghanbari, Cation exchange nanocomposite membrane containing $Mg(OH)_2$ nanoparticles: Characterization and transport properties, *Journal of Nanostructures*, 8 (2018) 191-201.

- Sepideh Saffarzadeh, Gholamreza Nabiyouni and **Farhad Heidary**, A short time microwave method for synthesis of magnetic $NiFe_2O_4$/NiO nanocomposites as a clean technology in photocatalytic degradation of water pollutants, *Journal of Materials Science: Materials in Electronics* 30 (2019) 8171–8181.

- Ehsan Salehi, **Farhad Heidary**, Parisa Daraei, Mohammad Keyhani and Milad Behjoomanesh, Carbon nanostructures for advanced nanocomposite mixed matrix

membranes: A comprehensive overview, *Reviews in Chemical Engineering*, (2019) DOI: 10.1515/revce-2017-0073

- Mohammad Nouri, Azam Marjani, Majid Tajdari and **Farhad Heidary**, Preparation of cellulose acetate membrane coated by PVA/Fe_3O_4 nanocomposite thin film: an in situ procedure, *Colloid and Polymer Science*, 296 (2018) 1213-1223.

- Mohammad Nouri, Azam Marjani, Majid Tajdari and **Farhad Heidary**, Improved Ni and Cd Rejection in Cellulose Acetate Mixed Matrix Membranes Coated with PVA/Fe_3O_4, *Journal of Non-Equilibrium Thermodynamics*, 43 (2019) 237-243.

- **Farhad Heidary** and Ali Reza Khodabakhshi, Ionic transport properties improvement of a new cation-exchange membrane containing functionalized CNT as a clean technology for refining of saline-liquids, *Environmental Technology*, (2019) DOI: 10.1080/09593330.2019.1662852.

5- Additional professional activities:

Research projects:

- Preparation and modification of ultrafiltration membrane for industrial wastewater treatment, National Elites Foundation**.**
- Preparation and characterization of homogeneous cation exchange membranes containing magnesium hydroxide nanoparticles, Arak University.
- Preparation of homogeneous ion-exchange membranes and investigation of functionalized carbon nanotubes addition on their performance, Arak University.
- Simple chemical synthesis of magnetite nanoparticles and its application in preparation of magnetic acrylonitrile-butadiene-styrene nanocomposites, Arak University.

- Preparation of polystyrene composites as microwave absorbing materials, Arak University.

Attending in academic conferences:

- Separation of Lead Ions from Aqueous Solutions by Filtration with Surface Modified Regenerated Cellulose Ultrafiltration Membrane, S.S. Madaeni and **F. Heidary,** Iran Membrane Conference, Tehran, Iran, 15-16 February 2011.

- A comparative study on the electrochemical and morphological characteristics of the homogeneous cation exchange membranes based on SPPO & PVC prepared through different methods, **F. Heidary,** A.R. Khodabakhshi, A. Nemati Kharat, The First National Conference of New Technologies in Chemical and Petrochemical, Tehran, Iran, March 2014.

- Preparation and characterization of homogeneous ion exchange membranes based on SPPO & modified PVC, **F. Heidary,** A. Nemati Kharat, A.R. Khodabakhshi, The First National Conference of New Technologies in Chemical and Petrochemical, Tehran, Iran, March 2014.

- The effect of inorganic fillers content on the transport performance of cation exchange membranes, **F. Heidary,** A.R. Khodabakhshi, A. Nemati Kharat, The 15^{th} Iranian National Congress of Chemical Engineering (IChEC 2015) University of Tehran, Tehran, Iran, 17-19 February 2015.

- Preparation of cation exchange membranes incorporating inorganic oxide nanoparticles, **F. Heidary,** A. Nemati Kharat, A.R. Khodabakhshi, The 15^{th} Iranian National Congress of Chemical Engineering (IChEC 2015) University of Tehran, Tehran, Iran, 17-19 February 2015.

- Synthesis and characterization of sulfonated poly (2, 6-dimethyl-1, 4-phenylene oxide) (SPPO)– SiO_2 ion-exchange nanocomposite membrane**, F. Heidary,** A. Nemati Kharat, A.R. Khodabakhshi, 2nd International Conference on Desalination using Membrane Technology, SINGAPORE, 26-29 July 2015.

- Removal of cadmium from water using modified PVDF membrane, S.S. Madaeni and **F. Heidary,** 13th Iranian National Chemical Engineering Congress & 1st International Regional Chemical and Petroleum Engineering, Kermanshah, Iran, 25-28 October 2010.

- Investigation of PVA coated nanocomposite membrane performance for removal of toxic metal ions from aqueous solutions, **F. Heidary**, 9th National Seminar of Chemistry and Environment, Arak, Iran, 3-4 September 2019.

Invention:

- Functionalized Cellulose Ultrafiltration Membrane for Removal of Heavy Metals from Water, State Organization for Registration of Deeds & Properties, Intellectual Property Center
- Modified Microfiltration Membrane for Removal of Metal ions from Water, State Organization for Registration of Deeds & Properties, Intellectual Property Center

Teaching:

■ Industrial chemistry

■ Chemical Industries Fundamentals

■ Chemical reaction engineering (Reactor design)

■ Principles of industrial chemistry calculations

■ Membrane processes

■ Synthesis Methods of Nanostructured Materials

■ Surface Active Agents (Surfactants)

■ Corrosion of Metals