➢ Personal Information

Name: Hossein Dehghani

Place of birth: Isfahan, Iran

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➢ Research Interests

Synthesis: Porphyrins, Organic Dyes, Nanocomposite Materials

Thermodynamic

Solar Cells: Dye-Sensitized Solar Cell (DSSC), Quantum Dot-Sensitized Solar Cell (QDSSC), Perovskite Solar Cell (PSC)

Hydrogen Storage

Biochemistry: Biosensor, Drug Delivery

➢ Educational Background

Ph.D.: Inorganic Chemistry

Department of Chemistry, Shiraz University, Shiraz, I. R. Iran.
Title: Preparation and Spectroscopic Characterization of 2:1 Molecular Complexes of DDQ and TCNE with Meso-tetraphenylporphyrins

M.Sc.: Inorganic Chemistry

Faculty of Sciences, Sharif Industrial University, Tehran, I. R. Iran.
Title: Reversibility Study of Adduct of Cobalt (II) Complexes with Oxygen

B.Sc. Pure Chemistry

Faculty of Sciences, Kashan University, Kashan, I. R. Iran.

➢ Employment to Date

Assistant Professor of Inorganic Chemistry, Faculty of Sciences, Kashan University, Kashan, I. R Iran (1998-2007).

Associate Professor of Inorganic Chemistry, Inorganic Chemistry Department, Faculty of Chemistry, Kashan University, Kashan, I. R Iran (2007-2014).

Professor of Inorganic Chemistry, Inorganic Chemistry Department, Faculty of Chemistry, Kashan University, Kashan, I. R Iran (2014- present).

➢ Teaching Experience

B.Sc.: Inorganic Chemistry and related Laboratories, General Chemistry
M.Sc.: Advance Inorganic Chemistry, Organometallic Chemistry
Ph.D.: Special Topics in Inorganic Chemistry, Inorganic Polymer Chemistry.

➢ Publications

1) D. Mohajer, H. Dehghani, Preparation and spectroscopic characterization of 2:1 molecular complexes of tetracyanoethylene and meso-tetraphenylporphyrins, Bulletin of the Chemical Society of Japan, Vol. 73, pp. 1477, 2000.
2) D. Mohajer, H. Dehghani, Exclusive 2:1 molecular complexation of 2,3-dichloro-5,6-dicyanobenzoquinone and para-substituted meso-tetraphenylporphyrins: spectral analogues for diprotonated meso-tetraphenylporphyrin, Journal of the Chemical Society, Perkin Transactions 2, Vol. 2, pp. 199, 2000.
3) M. Mazloum Ardakani, H. R. Zare, H. Dehghani, M. Jalayer, Silver (I) ion selective membrane electrode based on derivative of porphine, Bulletin of Electrochemistry, Vol. 20, pp. 385, 2004.
4) M. Mazloum Ardakani, H. Dehghani, M. Jalayer, H. R. Zare, Potentiometric determination of silver (I) by selective membrane electrode based on derivative of porphyrin, Analytical Sciences, Vol. 20, pp. 1667, 2004.
5) M. Mazloum Ardakani, P. Rahimi, H. Dehghani, P. Ebrahimi Karami, H. R. Zare, S. Karami, Electrocatalytic reduction of dioxygen on the surface of glassy carbon electrodes modified with cobalt porphyrin complexes, Electroanalysis, Vol. 19, pp. 2258, 2007.

6) H. Dehghani, F. Fathi,Synthesis of 1:2 molecular complexes between free base meso-tetraarylporphyrins and sulfur trioxide, Journal of Porphyrins and Phthalocyanines, Vol. 11, pp. 742, 2007.

7) H. Dehghani, A. R. Ansari Sardrood, Synthesis and spectroscopic characterization of new molecular complexes of bismuth(III) chloride with free base meso-tetraarylporphyrins, Bulletin of the Chemical Society of Japan, Vol. 80, pp. 518, 2007.

8) H. Dehghani, A. R. Ansari Sardrood, Molecular complexation of free base meso-tetraarylporphyrins with antimony(III) chloride in free solvent media, Polyhedron, Vol. 26, pp. 4263, 2007.

9) H. Dehghani, M. R. Mansournia, Thermodynamic studies of sitting-atop (SAT) complexation of uranyl and free base meso-tetraarylporphyrins, Journal of Coordination Chemistry, Vol. 61, pp. 2743, 2008.

10) H. Dehghani, M. Bordbar, S. Rezakhani, Thermodynamic studies of sitting-atop complexation between free base meso-tetraarylporphyrins and antimony(III) chloride in chloroform, Journal of Coordination Chemistry, Vol. 61, pp. 1655, 2008.

11) H. Dehghani, M. Babaahmadi, Synthesis and characterization of intermediate sitting-atop (i-SAT) complexes of free base meso-tetraarylporphyrins and tin(IV) chloride, Polyhedron, Vol. 27, pp. 2739, 2008.

12) H. Dehghani, M. Shaterian, Synthesis of intermediate sitting-atop complexes (i-SAT) from the reaction between free base meso-tetraarylporphyrins and phosphorus(III) chloride in solvent free media, Polyhedron, Vol. 27, pp. 3263, 2008.

13) H. Dehghani, M. Bordbar, S. Rezakhani, M. R. Mansournia, Spectrophotometric studies of the thermodynamics of molecular interaction between some free base meso-tetraarylporphyrins and SbF_3, Bulletin of the Chemical Society of Japan, Vol. 81, pp. 711, 2008.

14) H. Dehghani, F.Fathi, Molecular complexation of meso-tetraphenylporphyrins with SO_2, Dyes and Pigments, Vol. 77, pp. 323, 2008.

15) H. Dehghani, M. Payam, M. R. Mansournia, Sitting-atop complex formation of free base meso-tetraarylporphyrins with zirconium(IV) chloride, Polyhedron, Vol. 27, pp. 2416, 2008.

16) H. Dehghani, M. R. Mansournia, Novel sitting-atop complexation between uranyl and meso-tetraarylporphyrins under mild conditions, Polyhedron, Vol. 27, pp. 849, 2008.

17) H. Dehghani, M. Shaterian, New cationic sandwich-type intermediate sitting-atop complexation between meso-tetraarylporphyrins and tantalum(V) chloride: synthesis,

spectroscopic characterization and photoluminescence study, Bulletin of the Korean Chemical Society, Vol. 30, pp. 2792, 2009.

18) H. Dehghani, M. Farshchian, Molecular interaction between free base meso-tetraarylporphyrins and o-chloranil, Journal of Heterocyclic Chemistry, Vol. 46, pp. 610, 2009.

19) H. Dehghani, M. R. Mansournia, Synthesis and spectroscopic characterization of the new sitting-atop complexes from reaction of zirconyl nitrate and free base meso-tetraarylporphyrins in mild conditions, Bulletin of the Korean Chemical Society, Vol. 30, pp. 1715, 2009.

20) H. Dehghani, M. Shaterian, Synthesis under solvent free conditions and photoluminescence study of ionic intermediate sitting-atop complexes of meso-tetraarylporphyrins and phosphorus oxychloride, Inorganica Chimica Acta, Vol. 362, pp. 5151, 2009.

21) H. Dehghani, M. R. Mansournia, A spectrophotometric and thermodynamic study of the sitting-atop complex formation from reaction between free base meso-tetraarylporphyrins and zirconyl nitrate in chloroform solution, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, Vol. 74, pp. 324, 2009.

22) H. Dehghani, E. Jafari, M. R. Mansournia, F. Behnoudnia, Spectrophotometric studies of the thermodynamics of sitting-atop complexation between free base meso-tetraarylporphyrins and titanium(IV) chloride, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, Vol. 72, pp. 1034, 2009.

23) H. Dehghani, M. Bordbar, M. Mojiri, Foroushani, S. Karami, M. R. Mansournia,Synthesis, characterization and the thermodynamic study of intermediate sitting-atop (i-SAT) complexes of free base meso-tetraarylporphyrins with $InCl_3$, Inorganica Chimica Acta, Vol. 362, pp. 1619 ,2009.

24) H. Dehghani, M. Shaterian, Synthesis of new ionic intermediate sitting-atop complexes of free base meso-tetraarylporphyrin and phosphorus(V) chloride under solvent free conditions, Inorganica Chimica Acta, Vol. 362, pp. 2868, 2009.

25) H. Dehghani, S. Bakhshayesh, F. Behnoudnia, Synthesis of new sandwich intermediate sitting-atop complexes between meso-tetraarylporphyrins and germanium(IV) chloride, Inorganica Chimica Acta, Vol. 362, pp. 3025, 2009.

26) H. Dehghani, S. Bakhshayesh, M. Shaterian, L. Motamedi, Sandwich intermediate sitting-atop complexation between free base meso-tetraarylporphyrins and tellurium (IV) chloride, Bulletin of the Korean Chemical Society, Vol. 31, pp. 815, 2010.

27) F. Behnoudnia, H. Dehghani, Synthesis and characterization of novel three-dimensional-cauliflower-like nanostructure of lead (II) oxalate and its thermal decomposition for preparation of PbO, Inorganic Chemistry Communications, Vol. 24, pp. 32, 2012.

28) H. Dehghani, H. Molaei, Synthesis and characterization of new molecular complexation between free base meso-tetraarylporphyrins and nitrosonium ion as π-acceptor, Inorganica Chimica Act, Vol. 384, pp. 133, 2012.

29) R. Akbarzadeh, H. Dehghani, Polyrotaxane with π-conjugated porphyrin and polyazomethine systems prepared from a type of porphyrindialdehyde and complex of β-cyclodextrin with 1,4-phenylenediamine, Chinese Journal of Polymer Science (English Edition), Vol. 31, pp. 139, 2013.

30) F. Behnoudnia, H. Dehghani, Copper(II) oxalate nanospheres and its usage in preparation of $Cu(OH)_2$, Cu_2O and CuO nanostructures: Synthesis and growth mechanism, Polyhedron, Vol. 12, pp. 102, 2013.

31) S. Bakhshayesh, H. Dehghani, Synthesis of magnetite-porphyrin nanocomposite and its application as a novel magnetic adsorbent for removing heavy cations, Materials Research Bulletin, Vol. 48, pp. 2614, 2013.

32) M. Mojiri, Foroushani, H. Dehghani, N. Salehi, Vanani, Enhancement of dye-sensitized solar cells performances by improving electron density in conduction band of nanostructure TiO_2 electrode with using a metalloporphyrin as additional dye, Electrochimica Acta, Vol. 92, pp. 315, 2013.

33) N. Abedian, H. Dehghani, Novel molecular complexation between meso-tetraarylporphyrinato magnesium (II) and phosphorus (III) chloride, Inorganic Chemistry Communications, Vol. 36, pp. 77, 2013.

34) R. Akbarzadeh, H. Dehghani, F. Behnoudnia, Sodium thiosulfate-assisted synthesis of NiS2 nanostructure by using nickel(II)-Salen precursor: optical and magnetic properties, Dalton Transactions, Vol. 43, pp. 16745, 2014.

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36) R. Akbarzadeh, H. Dehghani, A novel thermal reduction method towards the synthesis and growth of two unlike morphologies of nickel nanostructures, Dalton Transactions, Vol. 43, pp. 5474, 2014.

37) M. Afrooz, H. Dehghani, Enhanced photovoltaic properties of modified redox electrolyte in dye-sensitized solar cells using tributyl phosphate as additive, Journal of Power Sources, Vol. 262, pp. 140, 2014.

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44) P. Golabi, R. Akbarzadeh, H. Dehghani, Facile preparation of PbS nanostructures and PbS/f-CNT nanocomposites using xanthate as sulfur source: Thermal and optical characterization,Journal of Alloys and Compounds, Vol. 647, pp. 539, 2015.

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46) L. Mahmoudian, A. Rashidi, H. Dehghani, R. Rahighi, Single-step scalable synthesis of three-dimensional highly porous graphene with favorable methane adsorption, Chemical Engineering Journal, Vol. 304, pp. 784, 2016.

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50) M. Afrooz, H. Dehghani, Significant improvement of photocurrent in dye-sensitized solar cells by incorporation thiophene into electrolyte as an inexpensive and efficient additive, Organic Electronics, Vol. 29, pp. 57, 2016.

51) R. Akbarzadeh, S. S. Khalili, H. Dehghani, Fabrication and study of optical and electrochemical properties of CdS nanoparticles and the GO–CdS nanocomposite, New Journal of Chemistry, Vol. 40, pp. 3528, 2016.

52) R. Akbarzadeh, H. Dehghani, Sodium-dodecyl-sulphate-assisted synthesis of Ni nanoparticles: electrochemical properties, Bulletin of Materials Science, Vol. 40, pp. 1361, 2017.

53) S. S. Khalili, H. Dehghani, M. Afrooz, Composite films of metal doped CoS/carbon allotropes; efficient electrocatalyst counter electrodes for high performance quantum dot-sensitized solar cells, Journal of Colloid and Interface Science, Vol. 493, pp. 32, 2017.

54) M. Afrooz, H. Dehghani, S. S. Khalili, N. Firoozi, Effects of cobalt ion doped in the ZnS passivation layer on the TiO_2 photoanode in dye sensitized solar cells based on different counter electrodes,Synthetic Metals, Vol. 226, pp. 164, 2017.

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56) N. Firoozi, H. Dehghani, M. Afrooz, S. S. Khalili, Improvement photovoltaic performance of quantum dot-sensitized solar cells using deposition of metal-doped ZnS passivation layer on the TiO_2 photoanode, Microelectronic Engineering, Vol. 198, pp. 8, 2018.

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59) F. Vajedi, H. Dehghani, The characterization of TiO_2 -reduced graphene oxide nanocomposites and their performance in electrochemical determination for removing heavy metals ions of cadmium(II), lead(II) and copper(II), Materials Science and Engineering B: Solid-State Materials for Advanced Technology, Vol. 243, pp. 189, 2019.

60) Z. Ramezani, H. Dehghani, Effect of nitrogen and sulfur co-doping on the performance of electrochemical hydrogen storage of graphene, International Journal of Hydrogen Energy, 2019.

➢ National & International Conferences

1) Fahimesadat Vajedi, Hossein Dehghani, Synthesis of titanium dioxide-graphene nanocomposites (TiO_2 -G) by the hydrothermal method and their applications for removing heavy metal ions of cadmium(II), lead(II) and copper(II), 13th International Conference Advanced Carbon NanoStructures, Saint-Petersburg, 2017.
2) Mina Ahmadi Kashani, Hossein Dehghani, Facile preparation and study of optical and electrochemical properties of PbS nanostructures and PbS/ graphene nanocomposites, 13th International Conference Advanced Carbon NanoStructures, Saint-Petersburg, 2017.
3) Fahimesadat Vajedi, Hossein Dehghani, Hydrothermal synthesis, characterization and applications of titanium dioxide-graphene nanocomposites (TiO_2-G) for removing heavy metal ions of cadmium(II), lead(II) and copper(II), The 5 International Biochemistry and Molecular Biology conference, Songkhla, 2016.
4) Raziye Akbarzadeh, Hossein Dehghani, Stabilizer-assisted preparation and electrochemical properties of nickel nanoparticles, 19th Chemical physics congress, 2016.
5) Raziye Akbarzadeh, Hossein Dehghani, One-step synthesis of magnetic nickel nanostructures modified by octadecylamine using a new solvothermal reduction process, 18th Iranian Chemistry congress, 2015.
6) Seyede Sara Khalili, Raziye Akbarzadeh, Hossein Dehghani, Synthesis of CdS nanostructure from cadmium (II)-Salophen precursor by thermal deposition: optical and electrochemical properties, 18th Iranian chemistry congress, 2015.
7) Hossein Dehghani, Sara Bakhshayesh, Hydrothermal Synthesis and Characterization of Nanosized Cadmium sulfide, Iran-Belarus International Conference on Modern Applications of Nanotechnology (IBCN12), 2012.
8) Hossein Dehghani, Fatemeh Behnoudnia, Hydrothermal Synthesis of Nanorods and Nanosheets Antimony trioxide, Iran-Belarus International Conference on Modern Applications of Nanotechnology (IBCN12), 2012.

9) Hossein Dehghani, Sara Bakhshayesh, Synthesis and characterization of IronChromite($FeCr_2O_4$) Nanoparticles Prepared by Hydrothermal Method, Iran-Belarus International Conference on Modern Applications of Nanotechnology (IBCN12), 2012.
10) Hossein Dehghani, Maryam Shaterian, Preparation of Silica-Porphyrin Hybrid Nanostructures as Heavy Metal Ion Adsorbent, International Congress on Nanoscience & Nanotechnology (ICNN2012), 2012.
11) Hossein Dehghani, Mojtaba Mojiri Foroushani, Nafise Salehi Vanani, Self-assembly of 3-amino propyltrimethoxysilane to improve the efficiency of dye-sensitized solar cells, International Congress on Nanoscience & Nanotechnology (ICNN2012), 2012.
12) Hossein Dehghani, Elham Safaei, Zahra Kazemi, Hydrothermal synthesis and characterization of mercury(II) sulphide, International Congress on Nanoscience & Nanotechnology (ICNN2012), 2012.
13) Hossein Dehghani, Nafise Salehi Vanani, Mojtaba Mojiri Foroushani, Preparation and characterization of silica- and titania-trans-porphyrin hybrid nanostructures and their application as lead and copper cations adsorbent, 14th Iranian Inorganic Chemistry Conference, 2012.
14) Hossein Dehghani, Malihe Afrooz, Synthesis and Characterization of Molecular Complexes between Diimines with 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone(DDQ), 14th Iranian Inorganic Chemistry Conference, 2012.
15) Hossein Dehghani, Sara Bakhshayesh, Synthesis and Characterization of Snowflake-like HgS Structure, 14th Iranian Inorganic Chemistry Conference, 2012.
16) Hossein Dehghani, Malihe Afrooz, Synthesis and characterization of molecular complexes between diimines with $SbCl_3$, XIIth Netherlands Catalysis and Chemistry Conference, 2011.