Raziyeh Arabahmadi

Personal information:

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Research interest

Molecular logic circuits, Molecular sensor and synthesis of azo-azomethine sensors

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Education

PhD in inorganic chemistry, Arak University

Title: Synthesis, characterization and spectral study of cobalt (II) complexes with pyridine and Schiff base ligands

Supervisor: Prof. Saeid Amani

MSc in inorganic chemistry, Arak University

Title: Synthesis, characterization and spectral study of Cu (II)-M(II) (M=Zn and pb) heterodinuclear complexes of new phenol-based macrocyclic ligands H_2L^n

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Working experience

1-Academic Staff at Shahrood University of Technology as a lecturer and researcher.

2- Manager of chemistry lab (from 2013 to 2017).

Journal papers

1- R.Arabahmadi, M. Orojloo and S.Amani, Three and four inputs combinational logic circuits based on a azo-azomethine chemosensor for the detection of Ni2+ and CN- /OAC- ions: Experimental and DFT studies**,** Journal of Photochemistry & Photobiology, A: Chemistry 434 (2023) 114231.

2- S. Kamali, **R.Arabahmadi**, M. Orojloo and S.Amani, A new azo Schiff base probe for detection of Cr3+, HSO4- , and CN- : Computational studies, 4-to-2 encoder, and integrated molecular logic circuits**,** Microchemical Journal 184 (2023) 108204.

3- R.Arabahmadi, M. Orojloo, A.R. sharafi, F.Parchegani and S.Amani, Detection of CN^{-}, OAC^{-}, HCO_3^{-} and Cu^{2+} using a novel Schiff base chemosensor: Three and two inputs combinatorial logic circuits, Microchemical Journal 187 (2023) 108429.

4- S. Kamali, **R.Arabahmadi** and S.Amani, Molecular half-subtractor and memory device based on a new Schiff-based colorimetric chemosensor for anions detection and computational studies. Inorganic Chemistry Communications 158 (2023) 111452

5- R. Arabahmadi, Hydrazone -based Schiff base dual chemosensor for recognition of Cu^{2+} and F^{-} by 1:2 demultiplexer, half adder, half subtractor, molecular keypad lock and logically reversible transfer gate logic circuits**,** Journal of Photochemistry & Photobiology, A: Chemistry 427 (2022) 113797.

6- R. Arabahmadi, Antipyrine-based Schiff base as fluorogenic chemosensor for recognition of Zn^{2+}, Cu^{2+} and $H_2PO_4^{-}$ in aqueous media by comparator, half subtractor and integrated logic circuits**,** Journal of Photochemistry & Photobiology, A: Chemistry 426 (2022) 113762.

7- S. Kamali, M. Orojloo , **R.Arabahmadi**, and S.Amani, Design and synthesis of a novel azo-Schiff base ligand: its application as a colorim chemosensor for selective detection of Ni2+ and CN- in aqueous-organic media computational studies, antimicrobial properties, and molecular logic circuits**,** Journal of Photochemistry & Photobiology, A: Chemistry 433 (2022) 114136.

8- R. Arabahmadi, A selective chemosensor and fluorescence probe for relay recognition ofcations and fluoride ions in aqueous media with logic gate function. Talanta, 2019, 194, 119–126.

9- R. Arabahmadi, A reversible fluorescence “ON-OFF-ON” sensor for sequential detection of F− and Cu2+ ions and its application as a molecular-scale logic device and security keypad lock. J. Coord. Chem, 2019, 72, 1187–1202.

10- R. Arabahmadi, Cobalt (II) Complexes Derived from Azo-Azomethine Ligands: Synthesis, Characterization, Solvatochromic, Fluorescence, Thermal, Electrochemical and Antimicrobial Properties. ChemistrySelect, 2019, 4, 4883 –4891.

11- R. Arabahmadi, A New Colorimetric Azo-azomethine Probe for Fluoride Ion Detection Based on the Proton Transfer Signaling Mode: Real-life Applications. Anal. Bioanal. Chem. Res. 2018, 5, 171-182.

12- R. Arabahmadi, Synthesis, spectral characterization, thermal analysis and electro chemistry properties of Ni(II) complexes derived from azo dyes. J. Therm. Anal. Calorim., 2016, 123, 595–605.

13- M. Orojloo, **R. Arabahmadi**, F. Naderi, F. Parchegani, M. Solimannejad,P. Zolgharnein, A novel receptor for detection of Zn^{2+} metalion and F^{-}, $H_2PO_4^{-}$ and AcO^{-} anions ina queous media: a DFT study. Chem. Pap., 2018, 72, 719–729.

14- R. Arabahmadi and S. Amani, Azo Schiff bases as colorimetric and fluorescent sensors for recognition of F^{-}, Cd^{2+} and Hg^{2+} ions. Anal. Methods, 2014, 6, 7384-7393.

15- R. Arabahmadi and S. Amani, A new fluoride ion colorimetric sensor based on azo–azomethine receptors, Supramol.Chem., 2014, 26, 321–328.

16- R. Arabahmadi and S. Amani,Synthesis and studies of selective chemosensors for anions and cations by azocontainingsalicylaldimine based receptors. J. Coord. Chem., 2013, 66, 218–226.

17- R.Arabahmadi, Navid Rezaie, Mojtaba Ghatee, Synthesis and characterization of copper based spinel coating on alumina substrate for spark plug aero-engine application, Journal of New Materials. 2021; 13 (45): 65-76.

18- R. ArabAhmadi, F. Hasanvand, G. Bruno,H. A. Rudbari, and S. Amani, Synthesis,Spectroscopy, and MagneticCharacterization of Copper(II) and Cobalt(II) Complexeswith 2-Amino-5-bromo pyridine as Ligand. ISRN Inorganic Chemistry, 2013, 1-7.

19- F. Hasanvand, **R. ArabAhmadi**, and S. Amani,Synthesis, Spectroscopy and Magnetic Characterization of Five Dinuclear Copper(II)Complexes with 2, 3 or 4-Pyridinemethanol as the Ligand, J. Sci. I. R. Iran,2012, 23, 37-43.

20- R. Arabahmadi and S. Amani, Synthesis, Spectroscopy, Thermal Analysis, Magnetic Properties and Biological Activity Studies of Cu (II) and Co(II) Complexes with Schiff Base Dye Ligands. Molecules, 2012, 17, 6434-6448.

21- M. Orojloo, F. Nourian, **R. Arabahmadi** and S. Amani, Ni(II), Cu(II), and Zn(II) complexes derived from a new Schiff base 2-((z)-(3-methylpyridin-2-yleimino)methyl)phenol and Synthesis of nano sized metal oxide particles from these compounds. Quim. Nova, 2015, 38, 1187-1191.

22- R. Arabahmadi and S. Amani, Four new Co(II) complexes with 2-amino-4-methylpyridine,2-amino-3-methylpyridine, or 2-amino-5-chloropyridine:synthesis, spectroscopy, magnetic properties, and crystal structure. J. Coord. Chem., 2011, 64, 2056-2065.

23- H. Khanmohammadi, **R. Arabahmadi**,M. H. Abnosi, H. R. Khavasi. Synthesis, crystalstructure, spectral and biological studies of Cu-M (M=Zn,pb)heterodinuclear complexes of new phenol-basemacrocyclic ligand. Polyhedron,2007, 26 ,4963-4970.

24- R.Arabahmadi, Synthesis of a new azo Schiff base colorimetric chemosensor for detection of cyanide and acetate anions, Today's Journal of Applied Chemistry, 2024.

Conference paper

1-S.Fadaei, R.Alizadeh, V.Amani, **R. Arabahmadi**, Synthesis, characterization, spectroscopic investigation and crystal structure determination of new derivative of N-phenylpyrazine-2-carboxamide ligands, presented in: 22nd Iranian Chemistry Conference, 23-25 August, 2023 University of Kurdistan.

2- S.Fadaei, R.Alizadeh, V.Amani, **R.Arabahmadi**, Synthesis, characterization, spectroscopic investigation and crystal structure determination of a new copper (II) complex with N-phenylpyrazine-2-carboxamide derivative ligand, presented in: 22nd Iranian Chemistry Conference, 23-25 August, 2023 University of Kurdistan.

3- F.Soleimani Ravandi, R.Alizadeh, V.Amani, **R.Arabahmadi**, Synthesis, Characterization & single-crystal X-ray Diffraction Studies of a New Co(II) carboxamide Complex, presented in: 22nd Iranian Chemistry Congress Iranian Research Organization for Science and Technology (IROST) 13-15 May 2024.

4- F.Soleimani Ravandi, R.Alizadeh, V.Amani, **R.Arabahmadi**, Synthesis, Characterization & single-crystal X-ray Diffraction Studies of a New Mn(II) Carboxamide Complex, presented in: 22nd Iranian Chemistry Congress Iranian Research Organization for Science and Technology (IROST) 13-15 May 2024.

5-S.Saeidifar, R.Alizadeh, **R.Arabahmadi**, S.Fadaei, Selective and rapid detection of Iron(II) ions using colorimetric and fluorescent sensors based on terpyridine derivative probe, presented in: 23nd Iranian Chemistry Conference, 23-25 November, 2023 University of Qom.

6- F.Soleimani Ravandi, R.Alizadeh, V.Amani, **R.Arabahmadi,** A novel complex of Co(II) with pyrazine-2-carboxamide derivative ligand; synthesis, characterization & single crystal X-ray diffraction studies, presented in: 23nd Iranian Chemistry Conference, 23-25 November, 2023 University of Qom.

7- R.Alizadeh, S.Fadaei, V.Amani, **R.Arabahmadi**, Synthesis, characterization, and crystal structure determination of new copper(II) complex [Cu(Lpz-2-OMe)2(η2-NO3)2(MeOH)2]

with the N-(2-methoxyphenyl)pyrazine-2-carboxamide ligand, presented in: 23nd Iranian Chemistry Conference, 23-25 November, 2023 University of Qom.

Research project

1-Synthesis, characterization and spectral study of azo-azomethin Ligands.

2- Design of a new Schiff-based chemosensor for detection of anions.

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