

Asma Verdian-Doghaei



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Education

- Ph.D. 2015, Physical Chemistry, Department of chemistry, Faculty of Sciences, Ferdowsi University of Mashhad, Iran (FUM).
- MSc. 2010, Physical Chemistry, Faculty of chemistry, Mazandran University, Babolsar, Iran.
- BSc. 2007, Pure Chemistry, Department of chemistry, Faculty of Sciences, Ferdowsi University of Mashhad, Iran (FUM).

Research Interests

- Biosensors and Nano-biosensors in food processing
- Biophysical chemistry properties of biomolecules
- Application of nanoparticles and new biomaterials in biochemical sensing

Publications

1. A Verdian-Doghaei, AA Rostami, A Omrani, Densities, Viscosities, and Volumetric Properties of Binary Mixtures of 1,2-Propanediol + 1-Heptanol or 1-Hexanol and 1,2-Ethenediol + 2-Butanol or 2-Propanol at (T = 298.15, 303.15, and 308.15) K, *J. Chem. Eng. Data* **2010**, *55*, 2894–2899.

2. **A Verdian-Doghaei**, MR Housaindokht, MR Bozorgmehr, Kh Abnous, Conformational switch of insulin-binding aptamer into G-quadruplex induced by K^+ and Na^+ : an experimental and theoretical approach, *Journal of Biomolecular Structure & Dynamics*, **2014**, in press.
3. **A Verdian-Doghaei**, MR Housaindokht, Kh Abnous, A fluorescent aptasensor for Potassium ion detection based triple-helix molecular switch, *Analytical Biochemistry*, 466, **2014**, 72–75.
4. F VahdatiRad, MR Housaindokht, R Jalal, H EshtiaghHosseini, **A Verdian-Doghaei**, S. Sadeghi, Spectroscopic and Molecular Modeling Based Approaches to Study on the Binding Behavior of DNA with a Copper (II) Complex. *Journal of fluorescence*, **2014**, 24, 1225-1234.
5. **A Verdian-Doghaei**, M R Housaindokht, M R Bozorgmehr, Molecular crowding effects on conformation and stability of G-quadruplex DNA structure: Insights from molecular dynamic simulation, *Journal of Theoretical Biology*, 364, **2015**, 103–112.
6. **A. Verdian-Doghaei**, M. R. Housaindokht, Spectroscopic study of the interaction of insulin and its aptamer - sensitive optical detection of insulin, *Journal of Luminescence*, 159, **2015**, 1–8.
7. F Dangkoob, MR Housaindokht, A Asoodeh, O Rajabi, Z Rouhbakhsh-Zaeri, **A Verdian-Doghaei**, Spectroscopic and molecular modeling study on the separate and simultaneous bindings of alprazolam and fluoxetine hydrochloride to human serum albumin (HSA): with the aim of the drug interactions probing, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 137, **2015**, 1106–1119.
8. Mohammad Reza Housaindokht, **Asma Verdian-Doghaei**, Biophysical probing the binding properties of a Cu(II) complex to G-quadruplex DNA: An experimental and computational study, *Luminescence*, 31.1, **2016**, 22-29.
9. M. R. Housaindokht, **A. Verdian-Doghaei**, A. R. Haghparast, P. Pordeli, E. Shikhzadeh, Z. Rouhbakhsh-Zaeri, F. Janati-Fard, M. Nosrati, A. Nakhaeipour, A. A. Esmaili, S. Solimani A label-free electrochemical aptasensor for detection of Escherichia coli O157:H7, *Advanced Materials Letters*, **2017**.

Research projects

- Rapid detection of E.Coli O157 in drinking water with the naked eye
- Electrochemical and spectroscopic study of the interaction of the bis(2-amino-4-methylpyridinium)transdiaquabis(pyrazine-2,3-dicarboxylato)-cuprate(II) hexahydrate with intramolecular G-quadruplex structure

Teaching Experience

- Physical Chemistry, engineering department, Payame Noor University of Mashhad, Mashad, Iran.
- General chemistry, Basic Sciences department, Payame Noor University of Mashhad, Mashad, Iran.

Education activities

- Design and validation of an amperometric biosensor for Quantitative determination of Methanol in Floral waters (advisor)

Conference presentation

- **A Verdian**, AA Rostami, A Omrani “Densities, Viscosities, Refractive Indexes and Excess Molar Volumes of Binary Mixtures (1, 2-Propanediol + 1- Heptanol, or 1- Hexanol) and (1, 2-Ethenediol + 2-Butanol, 2-Propanol) at various temperatures.” *12th Iranian Physical Chemistry Seminar, Kurdistan University, Sanandaj, Iran, 2009.*
- **A Verdian**, MR Housaindokht “Physico-chemical studies of the interaction between insulin and its aptamer (IBA) by using UV-Vis spectroscopy.” *16th Iranian Physical Chemistry Seminar, Mazandaran University, babolsar, Iran, 2013.*
- **A Verdian**, MR Housaindokht, MR Bozorgmehr “The role of cations in stability of human telomeric G-quadruple: a Molecular Dynamics Simulation study” *16th Iranian Chemistry Seminar, Yazd University, Yazd, Iran, 2013.*
- **A Verdian**, MR Housaindokht, *Third National Conference on New Technologies of chemistry and chemical engineering, Islamic Azad University, Ghouchan, , Iran, 2014.*

Awards

- **2010:** Top graduate degree from Mazandran University (MSc), Iran.
- **2014:** The best oral presentation award in Third National Conference on New Technologies of chemistry and chemical engineering, Islamic Azad University, Ghouchan, Iran.
- **2015:** The second top person in graduate degree (PhD), Ferdowsi University of Mashhad, Iran.

Society membership

- Member of Iranian chemical society (ICS) (2009 - present)

Professional Experience

- 2017-present: Assistant Professor Department of Food Science and Technology, Mashhad, Iran.

Lab Experience

- UV-Vis Spectroscopy
- Fluorescence Spectroscopy (static, Three-dimension, synchronize and Resonance light scattering)
- Circular Dichroism Spectroscopy
- Voltammetry (CV and DPV)
- Gel Electrophoresis
- Viscometer, Densitometer, Refractometer and etc.

Certificates

2017: Workshop of Entrepreneurship, Mashhad, Iran.

2013: Workshop of “simulation of proteins”, Institute for Research in Fundamental Sciences (IPM), school of Nanoscience, Tehran, Iran.

2013: Workshop of “simulation of protein-DNA complexes”, Institute for Research in Fundamental Sciences (IPM), school of Nanoscience, Tehran, Iran.

2012: 8th workshop of “Safety, protection and management of laboratory”, Ferdowsi University of Mashhad, Iran.

2005: International Computer Driving Licence (ICDL), Quchan, Iran.

Additional Skills

- Microsoft office (Including Word, PowerPoint and Excel)
- Molecular Dynamics Simulation software (GROMACS)
- Some of bioinformatics’ software (Docking, Ambertools, Pymol, etc.)

Languages

Farsi: mother tongue.

English: Speaking, Listening (Upper Intermediate) and Reading, Writing (Advanced)