

## Personal Information

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Family name, first name, title      Heydari Abolfazl, PhD  
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Date of birth/ Nationality      02.06.1986/ Iranian  
Gender/ Marital status      Male/ Married

## Education

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Sep 2012 – Jan 2017      **Shahid Bahonar University of Kerman**  
Doctor of Philosophy, Organic Chemistry  
Kerman, Iran  
**Title of thesis:** Synthesis and characterization of ionic poly( $\beta$ -cyclodextrin) and poly( $\beta$ -cyclodextrin)/ graphene or clay nanocomposite hydrogels: pharmaceutical and environmental applications. Supervisor: Prof. Hassan Sheibani

Sep 2009 – Feb 2012      **University of Tabriz**  
Master of Science, Organic Chemistry  
Tabriz, Iran  
**Title of thesis:** Synthesis of cyclodextrin-based nanostructure dendrimers and investigation of their applications as drug delivery system. Supervisor: Prof. Hassan Namazi

Jan 2005 – Feb 2009      **University of Zabol**  
Bachelor of Science, Pure Chemistry  
Zabol, Iran

## Research Experience

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Feb 2017 – Present      **Post-doctoral researcher**  
Slovak Academy of Sciences, Department for Biomaterials Research  
Bratislava, Slovakia

Feb 2017 – Present      **Research assistant**  
Slovak Academy of Sciences, Department of Composites Materials  
Bratislava, Slovakia

May 2016 – Jan 2017      **Visiting researcher**  
Slovak Academy of Sciences, Department of Composites Materials  
Bratislava, Slovakia

## Teaching experience

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Dec 2012 – Sep 2015

### Lecturer

Shahid Bahonar University of Kerman, Department of Chemistry  
Kerman, Iran

## Key Skills & Activities

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Languages

English, Persian

Expertise and  
Research Interests

- Modification of polysaccharides
- Synthesis of biocompatible and biodegradable polymers
- Preparation and characterization of thermoplastic films
- Familiar with cyclodextrins chemistry and their modification process
- Preparation and characterization of nanocomposite/ composite materials
- Modification of graphene and graphene oxide
- Material characterization
- Design and preparation of drug delivery system
- Water purification by biocompatible and biodegradable polymers
- Familiar with different software packages

Memberships of scientific  
societies

- Iran Nanotechnology Initiative Council (INIC)
- Iranian Chemical Society
- Iranian Polymer Society
- Young Researchers Society of Shahid Bahonar University of Kerman
- Young Researchers and Elite Club of Islamic Azad University Kerman Branch
- Biochemical Society of Iran

## Awards

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May 2017

Afzali-Pour prize as the "Distinguished Student Researcher" of the Shahid Bahonar University of Kerman in 2016-2017.

May 2016

Scholarship: Visiting research scholar

## Grants

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May 2017 - Present

**Project Title:** Preparation and characterization of biodegradable edible film made from starch/ bentonite clay nanocomposites using citric acid as crosslinker and preparation of fortified film with vitamin B<sub>2</sub>.

**Role on project:** Principal investigator

**Funding agency:** Endocrinology & Metabolism Research Center of Kerman University of Medical Science

Dec 2016 - Present

**Project Title:** Synthesis of poly(styrene-co-meldrum's acid methyl styrene) as an electrophile for nucleophilic reaction on polystyrene.

**Role on project:** Principal investigator

**Funding agency:** Young researchers and elite club of Islamic Azad University Kerman Branch

Feb 2016 - Oct 2016

**Project Title:** Synthesis of poly( $\beta$ -cyclodextrin)/bentonite clay nanocomposite hydrogel by epichlorohydrin as a crosslinker for removal of heavy metals from water.

**Role on project:** Principal investigator

**Funding agency:** Physiology Research Center of Kerman University of Medical Science

Nov 2015 - Apr 2016

**Project Title:** Synthesis of cationic poly(cyclodextrin-co-guanidine) by epichlorohydrin crosslinker and preparation of inclusion complex with riboflavin (vitamin B<sub>2</sub>) for controlled vitamin release.

**Role on project:** Principal investigator

**Funding agency:** Physiology Research Center of Kerman University of Medical Science and Chemistry Department of Shahid Bahonar University of Kerman

Jun 2015 - Jul 2016

**Project Title:** Synthesis and characterization of water soluble  $\beta$ -cyclodextrin-epichlorohydrin polymers and investigation of their applications in drug delivery of nifedipine.

**Role on project:** Principal investigator

**Funding agency:** Young Researchers Society of Shahid Bahonar University of Kerman

## Supervision of graduate students

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2014

### 3/MSc student (co-supervision)

Department of Chemistry, Shahid Bahonar University of Kerman, Kerman, Iran

**Thesis title:** Synthesis of  $\beta$ -cyclodextrin derivatives as nanocarriers and investigation of their applications in drug delivery systems

**Thesis title:** Synthesis of anionic  $\beta$ -cyclodextrin hydrogels in the presence of citric acid and their application for removal of methylene blue from aqueous solution

**Thesis title:** Synthesis and characterization of water soluble/insoluble epichlorohydrin- $\beta$ -cyclodextrin polymers and investigation of their applications in drug delivery of nifedipine

2016

### 2/MSc student (co-supervision)

Department of Chemistry, Shahid Bahonar University of Kerman, Kerman, Iran

**Thesis title:** Synthesis and characterization of poly( $\beta$ -cyclodextrin)/bentonite clay nanocomposite hydrogels and their application for removal of methylene blue from aqueous solution

**Thesis title:** Synthesis of cationic  $\beta$ -cyclodextrin hydrogels in the presence of guanidine and epichlorohydrin and their application for removal of anionic dye compounds from aqueous solution

## List of publications

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### Book Chapters

Hassan Namazi, Farzaneh Fathi, Abolfazl Heydari. *Nanoparticles based on modified polysaccharides*. The Delivery of Nanoparticles, Edited by Abbass A. Hashim, 05/2012: chapter 8; InTech., ISBN: 978-953-51-0615-9.

### Journal Publications

Abolfazl Heydari, Abbas Pardakhti, Hassan Sheibani. *Preparation and characterization of zwitterionic poly( $\beta$ -cyclodextrin-co-guanidinocitrate) hydrogels for ciprofloxacin controlled release*. Macromolecular Materials and Engineering, **2017**, DOI:10.1002/mame.201600501.

Abolfazl Heydari, Yeganeh Hassani, Hassan Sheibani, Abbas Pardakhti. *Water soluble  $\beta$ -cyclodextrin polymers as drug carriers to improve water solubility, thermal stability and controlled release of nifedipine*. Pharmaceutical Chemistry Journal **2017** just accepted.

Abolfazl Heydari, Hamideh Khoshnood, Hassan Sheibani, Farideh Doostan. *Polymerization of  $\beta$ -cyclodextrin in the presence of bentonite clay to produce polymer nanocomposites for removal of heavy metals from drinking water*. *Polymers for Advanced Technologies* **2017**, 28, 524–532.

Masoud Ghanei-Motlagh, Mohammad Ali Taher, Abolfazl Heydari, Reza Ghanei-Motlagh, Vinod K. Gupta. *A novel voltammetric sensor for sensitive detection of mercury(II) ions using glassy carbon electrode modified with graphene-based ion imprinted polymer*. *Materials Science and Engineering C* **2016**, 63, 367-375.

Abolfazl Heydari, Farideh Doostan, Hamideh Khoshnood, Hassan Sheibani. *Water-soluble cationic poly( $\beta$ -cyclodextrin-co-guanidine) as a controlled vitamin B2 delivery carrier*. *RSC Advances* **2016**, 6, 33267-33278.

Abolfazl Heydari, Hassan Sheibani. *Facile polymerization of  $\beta$ -cyclodextrin functionalized graphene or graphene oxide nanosheets using citric acid crosslinker by in-situ melt polycondensation for enhanced electrochemical performance*. *RSC Advances* **2016**, 6, 9760-9771.

Abolfazl Heydari, Mahsa Iranmanesh, Farideh Doostan, Hassan Sheibani. *Preparation of inclusion complex between nifedipine and ethylenediamine- $\beta$ -cyclodextrin as nanocarrier agent*. *Pharmaceutical Chemistry Journal* **2015**, 49, 605–612.

Abolfazl Heydari, Hassan Sheibani. *Fabrication of poly ( $\beta$ -cyclodextrin-co-citric acid)/ bentonite clay nanocomposite hydrogel: thermal and absorption properties*. *RSC Advances* 2015, 5, 82438-82449.

Hassan Namazi, Abolfazl Heydari. *Synthesis of  $\beta$ -cyclodextrin-based dendrimer as a novel encapsulation agent*. *Polymer International* **2014**, 63, 1447–1455.

Hassan Namazi, Abolfazl Heydari, Ali Pourfarzolla. *Synthesis of glycoconjugated polymer based on polystyrene and nanoporous  $\beta$ -cyclodextrin to remove copper (ii) from water pollution*. *International Journal of Polymeric Materials* **2014**, 63, 1-6.

### **Conferences (2014 - presence)**

Ivan Chodak, **Abolfazl Heydari**, Michaela Sednickova. *Structure of carbon black physical network determined by electrical conductivity during cyclic deformation of vulcanized rubber mixture*. The Eurofillers - Polymer Blends 2017, Hersonissos, Heraklion Crete, Greece; 04/2017.

Ivan Chodak, Michaela Sednickova, **Abolfazl Heydari**. *The effect of mechanical deformation on the structure of carbon black physical network determined by electrical conductivity of the vulcanized rubber mixture*. The 12<sup>th</sup> Fall Rubber Colloquium, Hannover, Germany; 11/2016.

**Abolfazl Heydari**, Hamideh Khoshnood, Hassan Sheibani. *Polymerization of  $\beta$ -cyclodextrin with epichlorohydrin in presence of bentonite clay for produce nanocomposite hydrogel.* The 6<sup>th</sup> International Conference on Nanostructures (ICNS6), Kish Island, Iran; 03/2016

**Abolfazl Heydari**, Mahsa Iranmanesh, Hassan Sheibani. *Investigation of inclusion complex between nifedipine and ethylenediamine-  $\beta$ -cyclodextrin as nanocarrier agent.* The 22<sup>nd</sup> Iranian Seminar of Organic Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz, Iran; 08/2014

**Abolfazl Heydari**, Yeganeh Hasani, Hassan Sheibani. *Synthesis and characterization of water soluble epichlorohydrin- $\beta$ -cyclodextrin polymers. influence of reaction conditions on the structure.* The 22<sup>nd</sup> Iranian Seminar of Organic Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz, Iran; 08/2014

Yeganeh Hasani, **Abolfazl Heydari**, Hassan Sheibani. *Effect of epichlorohydrin- $\beta$ -cyclodextrin polymer on the solubility and stability of nifedipine.* The 22<sup>nd</sup> Iranian Seminar of Organic Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz, Iran; 08/2014