

## Hamid Sadeghi Abandansari

Organic Chemistry, Ph.D.

Tel.: +98 9113241640

Email: [sadeghi.chem89@gmail.com](mailto:sadeghi.chem89@gmail.com)



### Education

Royan Institute for Stem Cell Biology and Technology, Tehran, Iran (2014-2017)

Postdoctorate (postdoc) in Tissue engineering and smart drug delivery systems

**Advisor:** Prof. Hossein Baharvand

**Thesis Title:** In situ formation of interpenetrating polymer network using sequential thermal and click crosslinking for enhanced retention of transplanted cells

University of Shahid Beheshti, Tehran, Iran (2010-2014)

Ph.D. in Organic chemistry

**Advisor:** Prof. Mohammad-Reza Nabid

**Thesis Title:** Design and synthesis of new stimuli-responsive nano-carriers and use of them as target drug delivery systems

University of Damghan, Damghan, Iran (2007-2009)

M.Sc. in Organic chemistry

**Advisor:** Dr. Hossein Behniafar

**Thesis Title:** New Wholly Aromatic Poly(ether imide)s: Synthesis, Characterization and Properties

### Research interests

- ✓ **Synthesis of polymeric systems and small molecules**
- ✓ **Tissue Engineering and Regenerative Medicine**  
Scaffolds, Cardiac Patch, Injectable hydrogel.
- ✓ **Smart Drug Delivery Systems**  
Hydrogels, Injectable Hydrogels, Liposome, nanogels, Nanomicelles, Dendrimers.
- ✓ **Bioinks for 3D printing**  
Injectable Hydrogels

### Honors and awards

- ✓ Ranked 1th among 10 graduated students at the end of M.Sc. studies (2009).
- ✓ Top researcher of Royan Institute in 2018
- ✓ The 3<sup>rd</sup> Best Poster Presenter at 18<sup>th</sup> Royan International Congress on Stem Cell Biology & Technology, 7-9 September 2022

## Publications

**1-** Synthesis, characterization, and evaluation of low molecular weight poly(b-amino ester) nanocarriers for enhanced T cell transfection and gene delivery in cancer immunotherapy  
Alireza Gharatape, Ali Sayadmanesh, Hamid Sadeghi-Abandansari, Hossein Ghanbari, Mohsen Basiri and Reza Faridi-Majidi  
*Nanoscale Advances* (2025)

**2-** Topical Administration of Mucoadhesive Liposomes–Epoetin- $\beta$  for Targeting the Ocular Posterior Segment  
S Pakian, M Nabid, L Satarian, **HS Abandansari**, A Mirkani  
*Molecular Pharmaceutics* (2025)

**3-** Advances in IgY antibody dosage form design and delivery strategies: Current status and future perspective  
S Yakhkeshi, MB Isah, **H Sadeghi-Abandansari**, X Zhang  
*International Journal of Biological Macromolecules*, (2025)

**4-** Synthesis and characterization of poly ( $\beta$ -amino ester) polyplex nanocarrier with high encapsulation and uptake efficiency: impact of extracellular conditions  
A Gharatape, **H Sadeghi-Abandansari**, H Ghanbari, M Basiri, Reza Faridi-Majidi  
*Nanomedicine* (2025)

**5-** Shell-sheddable and charge switchable magnetic nanoparticle as pH-sensitive nanocarrier for targeted drug delivery applications  
E Aram, H Sadeghi-Abandansari, F Radmanesh, HR Khorasani, Mohammad Reza Nowroozi, Ali Hassanpour, Hossein Baharvand, Davood Sabour  
*Polymers for Advanced Technologies* (2024)

**6-** Switchable PAMAM megamers for deep tumor penetration and enhanced cell uptake  
Effat Nekouefarda, Fatemeh Radmaneshg, Ibrahim Zarkesh, Marzieh Ebrahimi, Mohamad Raoufi, **Hamid Sadeghi Abandansari**, Hossein Baharvand, Rassoul Dinarvand  
*Journal of Controlled Release* (IF: 10.8) (2024)

**7-** Stabilization of Cationic Liposomes Using Hyaluronic acid-modified Gold Nanoparticles by Post-Microfluidics Conjugation Approach for Drug Delivery Applications.  
Sarvenaz Pakian, **Hamid Sadeghi-Abandansari**, Mohammad-reza Nabid  
*Journal of Drug Delivery Science and Technology* (IF: 5) (2024)

**8-** ROS scavenging activity of polydopamine nanoparticle-loaded supramolecular gelatin-based hydrogel promoted cardiomyocyte proliferation.

I Zarkesh, F Movahedi, **H Sadeghi-Abandansari**, S Pahlavan, Mansoureh Soleimani, Hossein Baharvand. *International Journal of Biological Macromolecules* (IF:8.2) (2024)

**9-** Nanocarrier-based gene delivery for immune cell engineering.

A Gharatape, **H Sadeghi-Abandansari**, A Seifalian, R Faridi-Majidi  
*Journal of Materials Chemistry B* (IF: 7.5) (2024)

**10-** Reduction-sensitive flower-like magnetomicelles based on PCL-ss-PEG-ss-PCL triblock copolymer as anti-cancer drug delivery system.

Effat Nekoueiyyard, Fatemeh Radmanesh, Hossein Baharvand, Athar Mahdiah, **Hamid Sadeghi-Abandansari**, Rassoul Dinarvand. *European Polymer Journal* (IF: 5.5) (2023)

**11-** Chemical modification of hyaluronic acid improves its supportive action on embryo implantation.

Roya Ganji, Shohreh Mashayekhan, **Hamid Sadeghi Abandansari**, Reza Aflatoonian, Mohammad-Hossein Ghanian, Poopak Eftekhari-Yazdi. *International Journal of Biological Macromolecules* (IF: 6.95) (2022)

**12-** Smart and Multi-Functional Magnetic Nanoparticles for Cancer Treatment Applications: Clinical Challenges and Future Prospects.

Elham Aram, Masome Moeni, Roya Abedizadeh, Davood Sabour, **Hamid Sadeghi-Abandansari**, Jabbar Gardy and Ali Hassanpour. *Nanomaterials* (IF: 4.92), (2022)

**13-** Gelatin-based Injectable Hydrogel/Microgel Composite as Combinational dual drug delivery system for Local Co-Delivery of Curcumin and 5-Fluorouracil in Synergistic Therapy of Colorectal Cancer.

Sarvenaz Pakian, Fatemeh Radmenesh, **Hamid Sadeghi-Abandansari**, Mohammad-reza Nabid  
*ACS Applied Polymer Materials* (IF: 4.85), (2022)

**14-** Local co-delivery of curcumin and 5-fluorouracil using Schiff's base cross-linked injectable hydrogels for colorectal cancer combination therapy.

**Hamid Sadeghi-Abandansari**, Sarvenaz Pakian, Mohammad-reza Nabid, Marzieh Ebrahimi, Alaleh rezalotfi. *European Polymer Journal* (IF: 4.6), 157(2), 110646 (2021).

**15-** Hydrogel-mediated delivery of microRNA-92a inhibitor polyplex nanoparticles induces localized angiogenesis.

Fatemeh Radmanesh, **Hamid Sadeghi Abandansari**, Mohammad Hossein Ghanian, Sara Pahlavan, Fahimeh Varzideh, Saeed Yakhkeshi, Mehdi Alikhani, Sharif Moradi, Thomas Braun, Hossein Baharvand. *Angiogenesis* (IF: 9.59), 24(3), 657-676 (2021)

**16-** 10th Royan Institute's International Summer School on “Molecular Biomedicine: From Diagnostics to Therapeutics”.

Sharif Moradi, Parisa Torabi, Saeed Mohebbi, Sara Amjadian, Piter Bosma, Farnoush Faridbod, Vahid Khoddami, Morteza Hosseini, Sadegh Babashah, Maryam Ghotbaddini, Arezoo Rasti, Faezeh Shekari, **Hamid Sadeghi-Abandansari**, Jafar Kiani, Mehdi Shamsara, Mohammad Kazemi-Ashtiani, Samira Gholami. *BioEssays* (IF: 4.62), 42(6) (2020).

**17-** Immunoprotection of pancreatic islets.

Hossein Baharvand, Ensiyeh Hajizadeh-Saffar, Zhila Izadia, Hamid Akbari-Javara, **Hamid Sadeghi-Abandansari**, Mohammad Hossein Ghanian. **US patent**. US2019/0338271 A1, (2019).

**18-**Hydrogel-Mediated Sustained Systemic Delivery of Mesenchymal Stem Cell-Derived Extracellular Vesicles Improves Hepatic Regeneration in Chronic Liver Failure.

Soura Mardpour, Mohammad Hossein Ghanian, **Hamid Sadeghi-abandansari**, Saeid Mardpour, Abdoreza Nazari, Faezeh Shekari, Hossein Baharvand. *ACS Appl. Mater. Interfaces* (IF: 9.23), 11, 41, 37421–37433(2019).

**19-** Optimization of miRNA Delivery by using a Polymeric Conjugate based on Deoxycholic Acid-Modified Polyethylenimine.

Fatemeh Radmanesh, **Hamid Sadeghi Abandansari**, Sara Pahlavan, Mehdi Alikhani, Mahdi Karimi, Sarah Rajabi, Bahram Kazemi Demneh, Hossein Baharvand. *International journal of pharmaceutics* (IF: 5.87), 565, 391–408 (2019).

**20-** *In situ* formation of interpenetrating polymer network using sequential thermal and click crosslinking for enhanced retention of transplanted cells.

**Hamid Sadeghi Abandansari**, Mohammad Hossein Ghanian, Fahimeh Varzideh, Elena Mahmoudi, Sarah Rajabi, Payam Taheri, Mohammad Reza Nabid, Hossein Baharvand. *Biomaterials* (IF: 12.47), 170, 12-25 (2018)

**21-** Tolerance induction by surface immobilization of Jagged-1 for immunoprotection of pancreatic islets.

Zhila Izadia, Ensiyeh Hajizadeh-Saffar, Jamshid Hadjati, Mahdi Habibi-Anbouhi, Mohammad Hossein Ghanian, **Hamid Sadeghi-Abandansari**, Mohammad Kazemi Ashtiani, Zakieh Samsonchi, Mohammad Raoufi, Maedeh Moazenchi, Mahmoud Izadi, Anava sadat Sadr Hashemi Nejad, Haideh Namdari, Yaser Tahamtani, Seyed Nasser Ostad, Hamid Akbari-Javara, Hossein Baharvand. *Biomaterials* (IF: 12.47), 182, 191–201 (2018).

**22-** Engineering Folate Targeting Diselenide-containing Tri-Block Copolymer as a Redox Responsive Shell-sheddable Micelles for Anti-Tumour Therapy *In Vivo*.

Farnaz Behroozi, Mohammad-Jafar Abdkhodaie, **Hamid Sadeghi Abandansari**, Leila Satarian, Mohammad Molazem, Khuloud T. Al-Jamal, Hossein Baharvand. *Acta Biomaterialia* (IF: 8.94), 76, 239–256 (2018)

**23-** Smart Liposomal Drug Delivery for Treatment of Oxidative Stress Model in Human Embryonic Stem Cell-Derived Retinal Pigment Cells.

Farnaz Behroozi, Mohammad-Jafar Abdkhodaie, **Hamid Sadeghi Abandansari**, Leila Satarian, Mohammad Kazemi Ashtiani, Mahmoud Reza Jafari, Hossein Baharvand. *International journal of pharmaceutics* (IF: 5.87), 548, 62–72 (2018).

**24-** Polymer gel dosimeters with PVA–GA matrix.

Seyed Mohammad Mahdi Abtahi, **Hamid Sadeghi Abandansari**, *Australas Phys Eng Sci Med*, (IF: 1.16) 40(3):651-658 (2017).

**25-** Enhance chemotherapy efficacy and minimized anticancer drug side effects by using reversibly cross-linked pH- and redox-responsive nanogels as smart targeted drug delivery system.

**Hamid Sadeghi Abandansari**, Maryam Abuali, Mohammad Reza Nabid, Hassan Niknejad *Polymer* (IF: 4.43), 116, 16-26 (2017).

**26-** A new magnetic tailor-made polymer for separation and trace determination of cadmium ions by flame atomic absorption spectrophotometry.

Vahid Zarezade, Mohammad Behbahani, Fariborz Omid, **Hamid Sadeghi Abandansari** and Ghasem Hesame. *RSC Adv.* (IF: 3.36), 6, 103499 (2016).

**27 -** Vanadium–Schiff base complex-functionalized SBA-15 as a heterogeneous catalyst: synthesis, characterization and application in pharmaceutical sulfoxidation of sulfids.

Mohammad Javad Taghizadeh, Homman Karimi, **Hamid Sadeghi Abandansari** *Res Chem Intermed.* (IF: 2.91), 42, 8201–8215(2016).

**28-** Application of a tailor-made polymer as a selective and sensitive colorimetric sensor for reliable detection of trace levels of uranyl ions in complex matrices.

Mohammad Behbahani<sup>1</sup>, Sara Salimi, **Hamid Sadeghi Abandansari**, Fariborz Omid, Mani Salarian, Ali Esrafil. *RSC Adv.* (IF: 3.36), 5, 59912-59920 (2015)

**29-** Selective Solid-Phase Extraction and Trace Monitoring of Lead Ions in Food and Water Samples Using New Lead-Imprinted Polymer Nanoparticles.

Mohammad Behbahani, Parmoon Ghareh Hassanlou, Mostafa M. Amini, Hamid Reza Moazami, **Hamid Sadeghi Abandansari**, Akbar Bagheri, Salman Hassan Zadeh, *Food Anal. Methods* (IF: 2.66), 8, 558–568 (2015)

**30-** pH-sensitive nanogels based on Boltron® H40 and polyvinyl pyridine using mini-emulsion polymerization for delivery of hydrophobic anticancer drugs.

**Hamid Sadeghi Abandansari**, Seyed Jamal Tabatabaei Rezaei, Mohammad Reza Nabid, Hassan Niknejad. *Polymer* (IF: 4.43) 55, 3579-3590 (2014).

**31-pH-responsive unimolecular micelles self-assembled from amphiphilic hyperbranched block copolymer for efficient intracellular release of poorly water-soluble anticancer drugs**

Seyed Jamal Tabatabaei Rezaei, **Hamid Sadeghi Abandansari**, Mohammad Reza Nabid, Hassan Niknejad. *Journal of Colloid and Interface Science* (IF: 8.128) 425, 27–35 (2014).

**32- Design of an intelligent system based on thermosensitive tri-block copolymer for trace determination and removal of Lead ions from environmental and biological samples.**

Mohammad Behbahani, **Hamid Sadeghi Abandansari**, Mani Salarian, Meysam Babapour, Akbar Bagheri, Mohammad Reza Nabid. *Micro chemical acta* (IF: 6.232), 181, 129-137 (2014).

**33- Application of molecular imprinted polymer nanoparticles as a selective solid phase extraction for preconcentration and trace determination of 2,4-dichlorophenoxyacetic acid in the human urine and different water samples.**

Fariborz Omid, Mohammad Behbahani, **Hamid Sadeghi Abandansari**, Alireza Sedighi and Seyed Jamaledin Shahtaher. *Journal of Environmental Health Science and Engineering* (IF: 2.179), 12:137 (2014).

**34- Application of a magnetic molecularly imprinted polymer for the selective extraction and trace detection of lamotrigine in urine and plasma samples.**

Mohammad Behbahani, Saman Bagheri, Mostafa M. Amini, **Hamid Sadeghi Abandansari**, Hamid Reza Moazami, Akbar Bagheri. *J. Sep. Sci.* (IF: 3.64) 37(13):1610-1616 (2014).

**35 - Preparation of injectable and thermoresponsive hydrogel based on penta-block copolymer with improved sol stability and mechanical properties.**

**Hamid Sadeghi Abandansari**, Elham Aghaghafari, Mohammad Reza Nabid, Hassan Niknejad *Polymer* (IF: 4.43) 54, 1329 – 1340 (2013)

**36- Highly fluorinated poly(ether-imide)s derived from 2,2'-bis(3,4,5-trifluorophenyl)-4,4'-diaminodiphenyl ether and aromatic dianhydrides.**

H. Behniafar, **H. Sadeghi-abandansari**  
*Polymer International* (IF: 2.574), 61, 286–293, (2012)

**37- Probing Effects of Alternately-Embedded Phenoxy Phenyl Lateral Groups on Properties of Novel Aromatic Poly(ether-urea)s.**

Hossein Behniafar, **Hamid Sadeghi-Abendansari**. *Journal of Applied Polymer Science* (IF: 2.52), 118, 1887–1893 (2010)

## Patents

**P1.** “Design and manufacture of hydrogels loaded with chemical and biological fertilizers in agriculture”, **Iranian patents** System number 75363, filed in 2012.

**P2.** “Immunoprotection of pancreatic islets”, **US patent**. US2019/0338271 A1.

## Books

1- Author of a book entitled "**Graphene, a phenomenon of the 21st century**" in Shahid Beheshti University Press

## Conferences

1- **Poster** presentation at 18th Royan International Congress on Stem Cell Biology & Technology, entitled: Dual-crosslinked alginate hydrogels with shear-thinning property for 3D bio-printing applications. 7-9 September 2022, Royan Institute, Tehran, Iran.

2- Participate as **Chairperson** at 18th Royan International Congress on Stem Cell Biology & Technology, 7-9 September 2022, Royan Institute, Tehran, Iran.

3- Participate as **Speaker** at the 8th Malaysian **Tissue Engineering and Regenerative Medicine** Scientific Meeting (MTERMS) 2022.

4- Participate as **lecturer & Chairman** at the Royan Seminar on “**Cancer; From Bench to Bedside**”. 5-6 February 2020, Royan Institute, Tehran, Iran.

5- Participate as **Invited Speaker** at the 10<sup>th</sup> Royan International Summer School on “**Molecular Biomedicine: from Diagnostics to Therapeutics**”. 13-17 July 2019, Royan Institute, Tehran, Iran.

6- Participate as **Chairperson** at 15<sup>th</sup> Royan International Congress on “**Stem Cell Biology & Technology**”. 28-30 August 2019, Royan Institute, Tehran, Iran.

7- Teaching the course “**Tissue Engineering**” at the **3<sup>rd</sup> National Festival & International Congress on Stem Cell & Regenerative Medicine**. 27-28 November 2018, Royan Institute, Tehran, Iran.

8- Participate at 11<sup>th</sup> Royan International Congress on “**Stem Cell Biology & Technology**”. 2-4 September 2015, Royan Institute, Tehran, Iran.

9- **Poster** presentation at 10<sup>th</sup> International Symposium on “**PHARMACEUTICAL SCIENCES**” entitled: Preparation of injectable biodegradable thermoresponsive hydrogel based on PNIP-PCEC-PNIP multi-block copolymer for controlled release of anti-cancer drugs. 26-29 June 2012, Ankara, Turkey.



10- **Poster** presentation at 10<sup>th</sup> International Seminar on “**Polymer Science and Technology**” (ISPST 2012) entitled: Synthesis and characterization of new nanogel structure; usable in catalytic and/or biomedical application. 21-25 October 2012, Amirkabir University of Technology, 2012, Tehran, Iran.

11- Participate at 5<sup>th</sup> International Controlled Release Conference of Iran (ICRC 2011). 4-6 October 2011, Mashhad, Iran.

## **Teaching Experiences**

- 1- Teaching Organic chemistry (1, 2) for 2 semesters since 2023 up to now at University of Science and Culture of Tehran.
- 2- Teaching 4 courses of “**Tissue Engineering**” at Royan Institute.
- 3- Teaching 3 courses of “**Writing scientific articles**” at Royan Institute.
- 4- Teaching 3 courses of “**Calculations for Molecular Biology and Biotechnology**” at Royan Institute.
- 5- Teaching 2 courses of “**Nanomedicine**” for PhD students in Tissue Engineering at Royan Institute
- 6- Teaching the courses of “**Biomaterials**” for PhD students in Tissue Engineering at Royan Institute.
- 7- Teaching **Organic chemistry** (1, 2 and 3), **General chemistry** (1 and 2) courses and related laboratories and also **Material Separation and Identification Laboratory** for 5 semesters since 2010 at Shahid Beheshti University of Tehran.
- 8- Teaching **Organic chemistry** (1 and 2), **General chemistry** (1) and **Physical education chemistry** courses and related laboratories for 3 semesters since 2013 at Islamic Azad University Islamshahr Branch.

## **Funding Received**

- 1- Financial support from NATIONAL INSTITUTE FOR MEDICAL RESEARCH DEVELOPMENT (NIMAD), Iran (2018- 2020).
- 2- Financial support from Iran National Science Foundation, Iran (2024).

## **Work Experiences**

- 1- Postdoctoral researcher (postdoc) at Royan Research Institute for three years (2014-2017)
- 2- Full-time researcher at Royan Research Institute (2017-2020)
- 3- Academic staff at Royan Research Institute (2020-now)