

Arman Moini Jazani

Postdoctoral Associate

Carnegie Mellon University, Pittsburgh, PA, USA

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Research and Professional Experiences

Postdoctoral Researcher 09/2021-Current

Carnegie Mellon university, Pittsburgh, USA

Advisor: Krzysztof Matyjaszewski

Ongoing projects: Hyperbranched polymers, ATRP in water, photochemistry, oxygen tolerant ATRP, protein-polymer hybrids.

Research Assistant (PhD) 09/2015-08/2021

Concordia University, Montreal, Canada

Advisor: Jung Kwon Oh

Projects: Acid and reduction degradable polymers, amphiphilic block copolymers, thermo-responsive polymers, stimuli-responsive polymers, microfluidic self-assembly, concurrent ATRP and RAFT polymerization, drug delivery.

Research Intern (PhD) 07/2018-09/2018

Institute of Medicinal Plant Development (IMPLAD), Beijing, China

Advisor: Xiangtao Wang

Projects: Nanoparticles formulation, *in vitro* cells experiments, MTT assay, *in vivo* nanoparticle studies in animal models.

Quality Control Technician (Biochemist) 11/2013-12/2014

CDC Inc, Peterborough, Canada

Duties: SOP preparation, instrumentation calibration and maintenance, method development, data analysis and interpretation.

Undergraduate Research Assistant 09/2011-12/2012

Trent University, Peterborough, Canada

Advisor: Carolyn Kapron

Duties: animal handling, mice dissection, cells extraction, gel electrophoresis, western blotting.

Education

PhD: Chemistry 09/2015- 08/2021

Concordia University, Montreal, Canada

Thesis: Multi-location acidic pH/reduction responsive degradable polymers for drug delivery

GPA: 4.08/4.3

- Fast-track to PhD from 01/2018

B.Sc. (Honours): Biochemistry and Molecular Biology

09/2010- 12/2012

Trent University, Peterborough, Canada

Thesis: Cadmium-induced activation of Bcl-2-associated death promoter (BAD) in embryonic limb bud cells

Awards and Honours

B3X postdoctoral research scholarship renewal (\$ 55,000), Fonds de Recherche du Québec (FRQNT), QC, Canada (2023-2024).

B3X postdoctoral research scholarship (\$ 110,000), Fonds de Recherche du Québec (FRQNT), QC, Canada (2021-2023).

Concordia conference and exposition award (\$ 920.2), Concordia University, QC, Canada (2021).

Concordia accelerator award (\$ 5,000), Concordia University, QC, Canada (2021).

Concordia conference and exposition award (\$ 981.44), Concordia University, QC, Canada (2019).

Oral presentation award in Macromolecular Science and Engineering Division (MSED) (\$ 300), Canadian Chemistry Conference and Exhibition (CSCE), QC, Canada (2019).

B2X doctoral research scholarship (\$ 77,000), Fonds de Recherche du Québec (FRQNT), QC, Canada (2019-2023).

Alexander graham bell postgraduate scholarships-doctoral program (\$ 105,000), Natural Science and Engineering Council of Canada (NSERC), QC, Canada (2019-2022).

Mitacs Globalink research award (\$ 6,000), Mitacs Canada, Beijing, China (2018).

Faculty of arts and science graduate fellowship (\$ 24,000), Concordia University, QC, Canada (2018-2021).

Outstanding poster award (\$ 500), Canadian Society of Pharmaceutical Science (CSPS), QC, Canada (2017).

Outstanding poster award, Canadian High Polymer Forum (CHPF), ON, Canada (2016).

Triskelion fellowship in chemistry (\$ 5,000), Concordia University, QC, Canada (2016-2017).

Concordia conference and exposition award (\$ 626.88), Concordia University, QC, Canada (2016).

Trent international student scholarship (\$1,000), Trent University, ON, Canada (2011).

Member of Dean's honour roll, Trent University, ON, Canada (2011-2012).

Teaching and Mentorship Experiences

Globalink Mentor

05/2021-08/2021

Mitacs, Montreal, Canada

- Provided virtual health, safety, and social support for around ten Research Interns travelling to Canada for summer internship

Teaching Assistant (TA)

09/2015-05/2021

Concordia University, Montreal, Canada

- Responsible for leading organic chemistry laboratories, demonstrating lab techniques and marking lab report.

Publications

1. Martin Cvek, **Arman Moini Jazani**, Julian Sobieski, Thaiskang Jamatia, and Krzysztof Matyjaszewski. Comparison of mechano- and photoATRP with ZnO nanocrystals. *Macromolecules*, 2023, <https://doi.org/10.1021/acs.macromol.3c00250>
2. **Arman Moini Jazani**, Kriti Kapil, Grzegorz Szczepaniak, Hironobu Murata, Mateusz Olszewski, and Krzysztof Matyjaszewski. Fully oxygen-tolerant visible-light-Induced ATRP of acrylates in water: toward synthesis of protein-polymer hybrids. *Macromolecules*, 2023, 56, 5, 2017–2026.
3. Kriti Kapil, Grzegorz Szczepaniak, Michael R. Martinez, Hironobu Murata, **Arman Moini Jazani**, Jaepil Jeong, Subha R. Das, Krzysztof Matyjaszewski. Visible-light-mediated controlled radical branching polymerization in water. *Angewandte Chemie International Edition*, 2023, 62, 202217658.
4. **Arman Moini Jazani**, Dirk J. Schild, Julian Sobieski, Xiaolei Hu, Krzysztof Matyjaszewski. Visible light-ATRP driven by tris(2-pyridylmethyl)amine (TPMA) impurities in the open Air. *Macromolecular Rapid Communications*, 2022, 2200855.
5. Dirk J. Schild, Juliana Bem, Grzegorz Szczepaniak, **Arman Moini Jazani**, Krzysztof Matyjaszewski. Blue-light-induced atom transfer radical polymerization enabled by iron/copper dual catalysis, *Journal of Polymer Science*, 2022;1–9.
6. Antonina Simakova, Saadyah Averick, **Arman Moini Jazani** and Krzysztof Matyjaszewski. Controlling size and surface chemistry of cationic nanogels by inverse microemulsion ATRP, *Macromolecular Chemistry and Physics*, 2022, 2200210.
7. **Arman Moini Jazani** and Jung Kwon Oh. Synthesis of multiple stimuli-responsive degradable block copolymers via facile carbonyl imidazole-induced postpolymerization modification, *Polymer Chemistry*, 2022, 13, 4557-4568.
8. Moonhyun Choi, **Arman Moini Jazani**, Jung Kwon Oh and Seung Man Noh. Perfluorocarbon nanodroplets for dual delivery with ultrasound/GSH-responsive release of model drug and passive release of nitric oxide, *Polymers*, 2022, 14, 2240.
9. **Arman Moini Jazani**, Newsha Arezi, Chaitra Shetty, Jung Kwon Oh. Shell-Sheddable/Core-Degradable ABA Triblock Copolymer Nanoassemblies: Synthesis via RAFT and Concurrent ATRP/RAFT Polymerization and Drug Delivery Application, *Molecular Pharmaceutics*, 2021, 19, 1786-1794.
10. Xiaolei Hu, **Arman Moini Jazani**, and Jung Kwon Oh. Recent advances in development of imine-based acid-degradable polymeric nanoassemblies for intracellular drug delivery, *Polymer*, 2021, 230, 124024.

11. **Arman Moini Jazani**, Chaitra Shetty, Hourieh Movasat, Kamaljeet K. Bawa and Jung Kwon Oh. Imidazole-mediated dual location disassembly of acid-degradable intracellular drug delivery block copolymer nanoassemblies, *Macromolecular Rapid Communications*, 2021, 2100262.
12. Ge Zhang, Twinkal Patel, Pothanagandhi Nallepalli, Shubham Bhagat, Hanees Hase, **Arman Moini Jazani**, Ingo Salzmann, Zhibin Ye and Jung Kwon Oh. Macromolecularly engineered thermoreversible heterogeneous self-healable networks encapsulating reactive multidentate block copolymer-stabilized carbon nanotubes, *Macromolecular Rapid Communications*, 2021, 200514.
13. Yuhang Huang, **Arman Moini Jazani**, Elliot P. Howell, Lisa Reynolds, Jung Kwon Oh and Matthew G. Moffitt. Microfluidic shear processing control of biological reduction stimuli-responsive polymer nanoparticles for drug delivery, *ACS Biomaterials Science & Engineering*, 2020, 6, 9, 5069-5083.
14. **Arman Moini Jazani** and Jung Kwon Oh. Development and disassembly of single and multiple acid-cleavable block copolymer nanoassemblies for drug delivery, *Polymer Chemistry*, 2020, 11, 2934-2954.
15. Kamaljeet K. Bawa, **Arman Moini Jazani**, Zhibin Ye, Jung Kwon Oh. Synthesis of degradable PLA-based diblock copolymers with dual acid/reduction-cleavable junction, *Polymer*, 2020, 194, 122391.
16. Keaton Maruya-Li, Chaitra Shetty, **Arman Moini Jazani**, Newsha Arezi, Jung Kwon Oh. Dual reduction/acid-responsive disassembly and thermoresponsive tunability of degradable double hydrophilic block copolymer, *ACS Omega*, 2020, 5, 3734–3742.
17. Yuhang Huang, **Arman Moini Jazani**, Elliot P. Howell, Jung Kwon Oh, Matthew G. Moffitt. Controlled microfluidic synthesis of biological stimuli-responsive polymer nanoparticles. *ACS Applied Materials and Interface*, 2020, 12, 1, 177-190.
18. **Arman Moini Jazani**, Newsha Arezi, Chaitra Shetty, Sunghwa Hong, Haowen Li, Xiangtao Wang, Jung Kwon Oh. Tumor-targeting intracellular drug delivery based on dual acid/reduction-degradable nanoassemblies with ketal interface and disulfide core locations. *Polymer Chemistry*, 2019, 10, 2840-2853.
19. Kamaljeet K. Bawa, **Arman Moini Jazani**, Chaitra Shetty and Jung Kwon Oh. PLA-based triblock copolymer micelles exhibiting dual acidic pH/reduction responses at dual core and core/corona interface location. *Macromolecular Rapid Communications*, 2018, 39, 1800477.
20. **Arman Moini Jazani**, Newsha Arezi, Keaton Maruya-Li, Sungmin Jung, Jung Kwon Oh. Facile strategies to synthesize dual location dual acidic pH/ reduction-responsive degradable block copolymers bearing acetal/disulfide block junctions and disulfide pendants. *ACS Omega*, 2018, 3, 8980- 8991.
21. **Arman Moini Jazani** and Jung Kwon Oh. Dual location, dual acidic pH/reduction-responsive degradable block copolymer: synthesis and investigation of ketal linkage instability under ATRP conditions. *Macromolecules*, 2017, 50, 9427-9436.

Oral and Poster Presentations

1. **Arman Moini Jazani.** Fast and oxygen tolerant ATRP for biohybrids synthesis. 47th Controlled Radical Polymerization (CRP) consortium, Pittsburgh, USA, October 13-14th 2022. **(oral)**
2. **Arman Moini Jazani.** Polymer protein hybrids. 46th Controlled Radical Polymerization (CRP) consortium, Pittsburgh, USA, March 28-29th 2022. **(oral)**
3. **Arman Moini Jazani.** Branched polymer conjugates with proteins. 45th Controlled Radical Polymerization (CRP) consortium, Pittsburgh, USA, October 18-19th 2021. **(oral)**
4. **Arman Moini Jazani.** Development and disassembly of dual location acid-degradable intracellular drug delivery block copolymer nanoassemblies. Macromolecular Science and Engineering Division (MSED) of Canadian Society of Chemistry (CSC), February 25th, 2021. **(Invited talk)**
5. **Arman Moini Jazani** and Jung Kwon Oh. Dual acidic pH- and glutathione-responsive degradable polymeric micelles for anti-cancer drug delivery. Worlds Biomaterial Congress (WBC, Online), Glasgow, Scotland, December 11-15th 2020. **(oral)**
6. **Arman Moini Jazani** and Jung Kwon Oh. Synthesis of PEG-disulfide-PLA block copolymers. Advance polymeric materials. Montreal, QC, Canada, July 3rd, 2019. **(oral for industry)**
7. Yuhang Huang, **Arman Moini Jazani**, Jung Kwon Oh, Mathew Moffitt. Microfluidic control of structure and drug delivery properties of biological stimuli-responsive block copolymer nanoparticles. 102nd Canadian Chemistry Conference (CSC), Quebec City, QC, Canada, June 3-7th 2019. **(oral)**
8. **Arman Moini Jazani** and Jung Kwon Oh. Dual location acid-degradable polymeric micelles with self-accelerating hydrolysis properties. 102nd Canadian Chemistry Conference (CSC), Quebec, Canada, June 3-7th 2019. **(oral)**
9. **Arman Moini Jazani** and Jung Kwon Oh. Reactive copolymer-stabilized aluminum oxide nanoparticles: a proof-of-concept for development of robust self-healable heterogeneous crosslinked networks. Dural Inc. Montreal, QC, Canada, December 17th, 2018. **(oral for industry)**
10. **Arman Moini Jazani** and Jung Kwon Oh. Synthesis of well-defined, multi stimuli responsive degradable amphiphilic block copolymer via combining ATRP and RAFT polymerization: Toward dual reduction and acidic pH labile shell-sheddable micelles. 2nd Annual symposium of Quebec Center for Advanced Materials (QCAM-CQMF), Montreal, QC, Canada, May 3-4th, 2018. **(oral)**
11. **Arman Moini Jazani** and Jung Kwon Oh. DL-DSRD Platform of Block Copolymer Nanoassemblies for Tumor-targeting Intracellular Delivery. NorthernChem Inc. Niagara Falls, ON, Canada, March 13th, 2018. **(oral for industry)**
12. **Arman Moini Jazani** and Jung Kwon Oh. Smart nanomedicines with dual location dual stimuli-responsive polymeric nanoassemblies exhibiting location-specific degradation

and enhanced drug release. 1st Annual symposium of Quebec Center for Advanced Materials (QCAM), Sherbrooke, QC, Canada, October 23-24th, 2017. **(oral)**

- 13. Arman Moini Jazani**, Keaton Maryu-Li and Jung Kwon Oh. Exploration of a new strategy utilizing ATRP to synthesize dual location dual acidic pH/reduction-responsive degradable block copolymer. 1st Annual symposium of Quebec Center for Advanced Materials (QCAM), Sherbrooke, QC, Canada, October 23-24th, 2017. **(poster)**
- 14. Arman Moini Jazani** and Jung Kwon Oh. Dual location dual acidic pH/glutathione-responsive block copolymer strategy for precise control of drug release and cellular uptake. 100th Canadian Chemistry Conference (CSC), Toronto, Canada, May 28-June 1st, 2017. **(poster)**
- 15. Arman Moini Jazani** and Jung Kwon Oh. Dual reduction/acidic pH-responsive block copolymer micelles: synthesis, self-assembly and stimuli responsive enhanced release. Canadian Society for Pharmaceutical Science/Canadian Chapter of the Controlled Release Society (CSPS/CC-CRS) Conference, Montreal, Canada, May 10-12th, 2017. **(poster)**
- 16. Arman Moini Jazani** and Jung Kwon Oh. Dual location dual reduction/pH-responsive degradable block copolymer micelles for enhanced cellular uptake and drug-controlled release. 37th Canadian High Polymer Forum (CHPF), Gananoque, ON, Canada, August 9-11th, 2016. **(poster)**
- 17. Arman Moini Jazani** and Jung Kwon Oh. Multi-location multiple stimuli-responsive degradation (ML-MSRD) of block copolymer-based micelles for rapid and controlled release. CSCAS/CQMF Advanced Materials Annual Meeting, Montreal, QC, Canada, May 3-4th, 2016. **(poster)**