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Dr. Mina Hoorfar

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NSERC CRSNG

Canadian Common CV commun canadien

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Dr. Mina Hoorfar

Language Skills

Language	Read	Write	Speak	Understand	Peer Review
English	Yes	Yes	Yes	Yes	Yes

Degrees

- 2006/8 — Post-doctorate, Fuel Cell, Case Western Reserve University
  Supervisors: Dr. Jay A. Mann, 2006/1 - 2006/8
- 2005/10 — Doctorate, Mechanical Engineering, University of Toronto
  Supervisors: Dr. A. W. Neumann, 2001/5 - 2005/10
- 2001/4 — Master's Thesis, Mechanical Engineering, University of Toronto
  Supervisors: Dr. A. W. Neumann, 1999/9 - 2001/4
- 1997/9 — Bachelor's, Mechanical Engineering, University of Tehran

Recognitions

2023/8
Top 25 Canadian Immigrants
Canadian Immigrant
Prize / Award
Being recognized for my outstanding service to Canada

2023/6
Fellow of Canadian Academy of Engineering
The Canadian Academy of Engineering
Distinction
Being recognized for my service and research in the field of engineering

2021/11
Dean's Medal of Distinction
University of British Columbia
Distinction
An honour established in 2015 to celebrate the many achievements of outstanding individuals as part of the UBC Applied Science community.

2021/6
Fellow of Canadian Society of Senior Engineers
The Canadian Society of Senior Engineers
Distinction
Being recognized for my service in engineering

2020/6 Fellow of Canadian Society of Mechanical Engineering
Canadian Society for Mechanical Engineering
Distinction
Awarded to members in good/uninterrupted standing in the society for at least 5 years, who have attained excellence in mechanical engineering and who have contributed actively to the progress of their profession and of society.

2020/3 I Am Accessible Award
University of British Columbia
Prize / Award
The I Am Accessible Award is presented to recognize and celebrate UBC faculty and staff who exemplify the qualities of an inclusive educational institution.

User Profile

Research Specialization Keywords: Biomolecular detection, Bioprinting, Digital microfluidics, Flow in porous materials, Interfacial science, Metal oxide semiconductor sensors, Microfluidic-based gas sensing, Microfluidic fuel cell, Modeling drop dynamics, Optics, PEM fuel cell, Wetting and adhesion

Employment

2021/7 Professor
Mechanical Engineering, Engineering and Computer Science, University of Victoria
Full-time, Professor
Tenure Status: Tenure

2021/7 - 2026/7 Dean of Faculty of Engineering and Computer Science
Mechanical Engineering, Engineering and Computer Science, University of Victoria
Full-time, Term, Professor
Tenure Status: Tenure

2016/7 - 2021/6 Director
School of Engineering, Applied Science, University of British Columbia
Full-time, Professor
Tenure Status: Tenure

2015/7 - 2021/6 Professor
School of Engineering, Applied Science, University of British Columbia
Full-time, Professor
Tenure Status: Tenure

2015/9 - 2016/6 Acting Director
School of Engineering, Applied Science, University of British Columbia
Full-time, Professor
Tenure Status: Tenure

2014/12 - 2015/8 Associate Director- Research and International Engagement
School of Engineering, Applied Science, University of British Columbia
Full-time, Associate Professor
Tenure Status: Tenure

2011/7 - 2015/6 Associate Professor
School of Engineering, Applied Science, University of British Columbia
Full-time, Associate Professor
Tenure Status: Tenure

2007/7 - 2012/6
Status-Only Assistant Professor
Mechanical and Industrial Eng., Engineering, University of Toronto
Full-time
Tenure Status: Tenure Track

2006/9 - 2011/6
Assistant Professor
School of Engineering, Applied Science, University of British Columbia
Full-time, Assistant Professor
Tenure Status: Tenure Track

2005/11 - 2006/9
NSERC Postdoctoral Researcher
Chemical Engineering, Engineering, Case Western Reserve University
Full-time
Tenure Status: Non Tenure Track

1999/9 - 2005/10
Research Assistant
Mechanical and Industrial Eng., Engineering, University of Toronto
Full-time
Tenure Status: Non Tenure Track

2005/1 - 2005/4
Sessional Instructor
Mechanical and Industrial Eng., Engineering, University of Toronto
Full-time
Tenure Status: Non Tenure Track

2004/9 - 2004/12
Visiting Researcher
Physical Chemistry & Polymer Physics, Leibniz Institute for Polymer Research

2001/8 - 2002/9
Project Engineer
Alpha Global IT, Alpha Laboratories, Toronto

2001/9 - 2002/4
Teaching Assistant
Mechanical and Industrial Eng., Engineering, University of Toronto
Full-time
Tenure Status: Non Tenure Track

Research Funding History

Awarded [n=8]

2024/4 - 2029/3
Principal Investigator
Smart Gas Detection: Integrating Pre-Concentration Techniques and Artificial Intelligence for Multi-Component Gas Sensing for High Sensitivity and Selectivity in Diverse Environmental Conditions, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery Grant
Total Funding - 230,000
Portion of Funding Received - 230,000
Funding Competitive?: Yes

2022/9 - 2028/9
Co-applicant
NSERC CREATE Training Program in 3D Printing Technology and Materials (3DPTM), Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
CREATE
Total Funding - 1,650,000
Portion of Funding Received - 150,000
Funding Competitive?: Yes

Co-applicant : Hsi-Yung Feng; Karen Cheung; Mark MacLachlan; Michael Wolf; Mohsen Akbari; Rizhi Wang; Stephanie Willerth; William H. Turner; Xiaoliang Jin;

Principal Applicant : Hongbin Li

2025/9 - 2026/9
Principal Investigator

Surface Enhanced Raman Spectroscopy for Infection Detection at Wound Sites, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Mitacs Accelerate
Total Funding - 135,000
Portion of Funding Received - 135,000
Funding Competitive?: No

2025/9 - 2026/9
Principal Investigator

Hydrogen Detection and Quantification within Hydrogen-Enriched Natural Gas, Grant

Funding Sources:
Clean Growth Innovation Fund
Total Funding - 118,750
Portion of Funding Received - 118,750
Funding Competitive?: No

2020/9 - 2026/3
Co-applicant

Microsystems Technologies & Application, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
CREATE
Total Funding - 1,650,000
Portion of Funding Received - 150,000
Funding Competitive?: Yes

Co-applicant : Gerd Grau; Ozzy Mermut; Patricia Nieva; Peter Lian; Philip Ferguson; Pouya Rezai; Simon S. Park; Sylvain G. Cloutier; Winnie Ye;

Principal Applicant : Regina Lee

2022/9 - 2025/9
Co-investigator

Microfluidic-assisted sensing of blood biomarkers for at home health monitoring, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)-Accelerate
MITACS Accelarate
Total Funding - 240,000
Portion of Funding Received - 96,000
Funding Competitive?: No

Principal Investigator : Mohsen Akbari

2021/7 - 2025/3
Principal Investigator

Infrastructure to advance exosome biology & technology, Grant

Funding Sources:
Canada Foundation for Innovation (CFI)
John R. Evans Leaders Fund
Total Funding - 2,000,000
Portion of Funding Received - 1,305,434
Funding Competitive?: Yes

Co-applicant : Isaac Li; Jonathan Little

2024/4 - 2025/3
Principal Investigator

Nanoparticle Tracking Analysis System Urgently Required for Research in Targeted Drug-Delivery, Exosomes, Nanoplastics, and Artificial Cell Studies, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Research Tools and Instruments

Total Funding - 135,513
Portion of Funding Received - 135,513
Funding Competitive?: Yes

Completed [n=29]

2021/2 - 2024/9
Principal Investigator

H2Lab: A one-of-a-kind laboratory for investigating hydrogen-enriched natural gas from injection to combustion, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Alliance grant
Total Funding - 1,425,000
Portion of Funding Received - 570,000
Funding Competitive?: Yes

Co-applicant : Dimitry Sediako; Homayoun Najjaran; Joshua Brinkerhoff; Lukas Bichler; Sina Kheirkhah; Sunny Li

2021/9 - 2024/8
Co-applicant

Engineering gut osmolality biosensors, Grant

Funding Sources:
Weston Family Foundation
Weston Catalyst
Total Funding - 450,000
Portion of Funding Received - 112,500
Funding Competitive?: Yes

Co-applicant : Laurent Potvin-Trottier;

Principal Applicant : Carolina Tropini

2020/7 - 2024/6
Co-applicant

Green roll-to-roll Manufacturing of Low-cost High-Performance Large Area Flexible Electronics, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Alliance grant
Total Funding - 334,000
Portion of Funding Received - 175,000
Funding Competitive?: Yes

Principal Applicant : Peyman Servati

2023/9 - 2024/3
Principal Investigator

Eradication and commodification of invasive species: scotch broom and gorse, Grant

Funding Sources:
Lakes Foundation
Gorse Eradication Initiative
Total Funding - 50,000
Portion of Funding Received - 50,000
Funding Competitive?: No

2018/4 - 2024/3
Principal Investigator

Investigation of gas flow in microstructures for highly selective sensing, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery Grant
Total Funding - 230,000
Portion of Funding Received - 230,000
Funding Competitive?: Yes

2022/2 - 2024/2
Principal Investigator

Detection system for screening of Household Hazardous Waste (HHW) in recycling facilities, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Alliance Grant
Total Funding - 97,500
Portion of Funding Received - 60,000
Funding Competitive?: Yes

Co-applicant : Homayoun Najjaran

2020/11 - 2023/10
Principal Investigator

Cluster for Translation Extracellular Vesicle Research, Grant

Funding Sources:
University of British Columbia (UBC) Okanagan
Eminence Program
Total Funding - 567,000
Portion of Funding Received - 285,000
Funding Competitive?: Yes

Co-applicant : Isaac Li; Jonathan Little

2023/2 - 2023/9
Principal Investigator

L2M NSERC - Powdered Iron Supplement for Redispersion and Quick Consumption, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Idea to Innovation (I2IPJ)
Total Funding - 20,000
Portion of Funding Received - 20,000
Funding Competitive?: Yes

2020/10 - 2023/3
Principal Investigator

Feasibility Assessment and Development of Knowledge, Technology, and Tools for a Reliable Touch Interface for Metallic and Non-Metallic Surfaces, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate
Total Funding - 180,000
Portion of Funding Received - 180,000
Funding Competitive?: Yes

2019/1 - 2023/3
Principal Investigator

Handheld microfluidic device for screening THC, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Collaborative Research and Development
Total Funding - 825,000
Portion of Funding Received - 619,000
Funding Competitive?: Yes

Co-applicant : Homayoun Najjaran

2017/11 - 2021/10
Principal Investigator

Exosome cluster: development of an in-situ exosome isolation platform, Grant

Funding Sources:
University of British Columbia (UBC) Okanagan
Eminence Fund
Total Funding - 305,000
Portion of Funding Received - 152,500
Funding Competitive?: Yes

Co-applicant : Isaac Li

2018/10 - 2021/9
Principal Investigator

Development of Wireless In-Situ Sensors for Dissolved Gases in Liquid Waste, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Collaborative Research and Development
Total Funding - 690,000
Portion of Funding Received - 540,000
Funding Competitive?: Yes

Co-applicant : Ali Ahmadi; Homayoun Najjaran

2020/9 - 2021/8
Co-applicant

PCR lab-on-chip system for rapid and sensitive identification of SARS-CoV-2 infected case, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate
Total Funding - 240,000
Portion of Funding Received - 120,000
Funding Competitive?: Yes

Principal Applicant : Sepideh Pakpour

2018/1 - 2021/5
Principal Investigator

Development of a breath analyzer for diabetes, Contract

Funding Sources:
Breathtec Biomedical Inc.
R&D
Total Funding - 246,500
Portion of Funding Received - 246,500
Funding Competitive?: No

2018/4 - 2021/5
Principal Investigator

Investigation of gas flow in microstructure for highly selective sensing, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
DND/NSERC Discovery Grant Supplements
Total Funding - 120,000
Portion of Funding Received - 120,000
Funding Competitive?: Yes

2020/10 - 2021/4
Co-applicant

Development of an Air Surveillance Tool for Population-Wide COVID-19 Detection and Prediction, Contract

Funding Sources:
Government of Canada
Innovation for Defence Excellence and Security (IDEaS)
Total Funding - 200,000
Portion of Funding Received - 100,000
Funding Competitive?: Yes

Principal Applicant : Sepideh Pakpour

2019/5 - 2021/4
Co-applicant

Urgent Upgrade of Atomic Layer Deposition with Plasma Capability to Accelerate Energy Storage, Energy Conversion and Gas Sensing Research, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Research Tool and Instruments (RTI)
Total Funding - 149,480
Portion of Funding Received - 24,913

Funding Competitive?: Yes

Co-applicant : Alexander Uhl; Deborah Roberts; Mohammad Zarifi;

Principal Applicant : Jian Liu

2019/5 - 2021/4
Co-applicant

Trojan tag strategy for exosome liquid biopsy, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
New Frontiers in Research Fund - Exploration
Total Funding - 250,000
Portion of Funding Received - 83,000
Funding Competitive?: Yes

Co-applicant : Fred Menard;

Principal Applicant : Isaac Li

2020/4 - 2021/3
Principal Investigator

Multi-cell Temperature-controlled UV-Visible spectrophotometer, Grant

Funding Sources:
University of British Columbia
Critical Research Equipment & Tools Program (CRET)
Total Funding - 45,052
Portion of Funding Received - 45,052
Funding Competitive?: Yes

2020/4 - 2021/3
Principal Investigator

Environmental Test Chamber Urgently Required to Develop and Calibrate Microfluidic and Thin-film Sensing and Energy Conversion and Storage Technologies, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Research Tool and Instruments (RTI)
Total Funding - 102,927
Portion of Funding Received - 61,756
Funding Competitive?: Yes

Co-applicant : Alexander Uhl; Homayoun Najjaran; Jian Liu; Mohammad Zarifi

2020/3 - 2021/2
Principal Applicant

Feasibility assessment and development of knowledge, technology, and tools for mercaptan natural gas odorant monitoring, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate
Total Funding - 15,000
Portion of Funding Received - 15,000
Funding Competitive?: Yes

2020/7 - 2020/12
Principal Investigator

Electrochemical-based Aptasensor for the early detection of COVID-19, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Alliance COVID-19 grants
Total Funding - 50,000
Portion of Funding Received - 50,000
Funding Competitive?: Yes

2018/1 - 2020/12
Principal Investigator

Developing internal fiber chromatography, a new column designed for liquid, gas and supercritical fluid chromatography, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)

Accelerate Cluster
Total Funding - 126,000
Portion of Funding Received - 65,000
Funding Competitive?: Yes

Co-applicant : Homayoun Najjaran; Wesley Zandberg

2020/1 - 2020/12
Principal Investigator

Developing a microfluidic-based cannabis analyzer, Contract

Funding Sources:
Vitalis Extraction Technology
MITACS Accelarate
Total Funding - 47,600
Portion of Funding Received - 47,600
Funding Competitive?: No

2018/5 - 2020/4
Principal Investigator

Feasibility Assessment and Development of Knowledge, Technology, and Tools for Reliable Hydrogen Injection into Natural Gas Delivery Systems, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate
Total Funding - 600,000
Portion of Funding Received - 350,000
Funding Competitive?: Yes

Co-applicant : Dimitry Sediako; Joshua Brinkerhoff; Lukas Bichler; Sina Kheirkhah; Sunny Li

2017/12 - 2020/4
Principal Investigator

Development and Field Test of Highly Sensitive and Selective Microfluidic Gas Sensor for Methane Leak Detection, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Collaborative Research and Development
Total Funding - 388,000
Portion of Funding Received - 194,000
Funding Competitive?: Yes

Principal Applicant : Homayoun Najjaran

2018/9 - 2019/12
Co-applicant

Development of a liquid handling platform for DNA-based detection, Contract

Funding Sources:
Bio-Rad Laboratories USA
R&D
Total Funding - 168,000
Portion of Funding Received - 84,000
Funding Competitive?: No

Principal Applicant : Homayoun Najjaran

2018/4 - 2019/3
Principal Investigator

Addition of a mass flow controller into the plasma machine for etching microfluidic devices, Grant

Funding Sources:
University of British Columbia
Emergency Fund Competition- Equipment
Total Funding - 4,996
Portion of Funding Received - 4,996
Funding Competitive?: Yes

2018/4 - 2019/3
Principal Investigator

Gas chromatography & mass spectrometry (GC-MS) system required for calibration reference and identification of various target molecules for interdisciplinary research areas, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Research Tools and Instruments
Total Funding - 148,758
Portion of Funding Received - 30,000
Funding Competitive?: Yes

Co-applicant : Sina Kheirkhah; Soheil Mahmoud; Susan Murch; Wesley Zandberg

Under Review [n=1]

2023/9 - 2024/7
Principal Investigator

Development of non-scratch coating for household appliances, Grant

Funding Sources:
AeroPress Inc.
MITACS Accelarate
Total Funding - 200,000
Portion of Funding Received - 200,000
Funding Competitive?: No

Student/Postdoctoral Supervision

Bachelor's [n=33]

2023/9 - 2023/12
Principal Supervisor

Elise Lownsbrough, University of Victoria
Thesis/Project Title: Engineering Aspects of Harvesting Gorse
Present Position: BEng, University of Victoria

2023/7 - 2023/10
Principal Supervisor

Guanghao Chen, University of Victoria
Thesis/Project Title: Portable H2 sensing
Present Position: BEng, South East University

2023/7 - 2023/10
Principal Supervisor

Giovanna Romero, University of Victoria
Thesis/Project Title: Portable device for detecting and sorting of hazardous household waste
Present Position: BEng, Instituto Tecnologico de Estudios Superiores de Monterrey

2023/6 - 2023/9
Principal Supervisor

Ajitha Nayac, University of Victoria
Thesis/Project Title: Microplastic detection
Present Position: BEng, SRM Institute of Science and Technology

2023/5 - 2023/8
Principal Supervisor

Evyatar Wind-Granot, University of Victoria
Thesis/Project Title: Suppressing humidity sensitivity in H2 sensors
Present Position: BEng, University of Victoria

2022/9 - 2022/12
Principal Supervisor

Julia Jungwirth, University of Victoria
Thesis/Project Title: Microplastic detection based on Nile Red
Present Position: BEng, University of Victoria

2022/8 - 2022/10
Principal Supervisor

Zetao Miao, University of Victoria
Thesis/Project Title: Triboelectric sensors
Present Position: BEng, South East University

2022/6 - 2022/9 Principal Supervisor	Dattaprasad Balasaheb Khot, University of Victoria Thesis/Project Title: Study on VOC adsorption from plants Present Position: BEng, SWVSM'S Tayasaheb Kore Institute of Engineering and Technology
2022/5 - 2022/8 Principal Supervisor	Michelle Martindale, University of Victoria Thesis/Project Title: Development of VOC gas sensors Present Position: BEng, University of Victoria
2022/5 - 2022/8 Principal Supervisor	Bipin Venkateswaran, University of Victoria Thesis/Project Title: Development of smellsensing device Present Position: BEng, Indian Institute of Technology Madras
2020/8 - 2021/4 Principal Supervisor	Rhys Herzberg, University of British Columbia Thesis/Project Title: Design of an automated organoid microinjection platform Present Position: 4th year BASc, UBC
2020/5 - 2020/8 Principal Supervisor	Isabelle Adams, University of British Columbia Thesis/Project Title: Development of a microencapsulation platform for oral delivery of probiotic Present Position: Field service tech, USNR
2020/5 - 2020/8 Principal Supervisor	Shyam Kumar, IIT Thesis/Project Title: Development of a gas sensor for THC detection Present Position: MASc, Northeastern University
2020/5 - 2020/8 Principal Supervisor	Ahmed Zoher Sihorwala, IIT Thesis/Project Title: Development of a gas sensor for detection of natural gas leakage Present Position: PhD, University of Texas
2020/5 - 2020/8 Principal Supervisor	Giulia Ross, University of British Columbia Thesis/Project Title: Development of a highly-specific exosome isolation and characterization platform Present Position: MASc, UBC
2019/9 - 2023/4 Principal Supervisor	Vania Ahmadi, University of British Columbia Thesis/Project Title: Developing an impedence-based bacterial detection system on a microfluidic platform Present Position: Environmental Health Scientist
2019/9 - 2023/4 Principal Supervisor	Rudransh Kumar, University of British Columbia Thesis/Project Title: Designing and building a microinjection system to study the effects of designer probiotics on enteroids Present Position: MASc, Uttrakhand Technical University
2019/9 - 2023/4 Principal Supervisor	Sylvia Lam, University of British Columbia Thesis/Project Title: Designing an automated training setup to calibrate an array of microfluidic-based gas sensors Present Position: Mechatronics Engineer, Hexagon Purus Systems
2019/9 - 2020/3 Principal Supervisor	Kaden Workun, University of British Columbia Thesis/Project Title: Microencapsulation platform for oral delivery of microbiome-based therapy for the treatment of inflammatory bowel disease Present Position: MASc, UBC
2019/5 - 2020/4 Principal Supervisor	Graham Mcintosh, University of British Columbia Thesis/Project Title: Designing, building and testing bench top vaporization device for H2S detection from wastewater Present Position: Mechanical Engineer, Airborne Engines Ltd.

2019/5 - 2019/9 Principal Supervisor	Emily Earl, University of British Columbia Thesis/Project Title: Developing graphical user interface and controls for breath analysis and nuisance gas detectors Present Position: Lab Operation Manager, University of Victoria
2019/5 - 2020/4 Principal Supervisor	Joel Hunter, University of British Columbia Thesis/Project Title: Designing, building and testing bench top for breath analyser Present Position: Graduate mechanical EIT, Zanron Mechanical Services
2019/5 - 2021/4 Principal Supervisor	Shahera Islam, University of British Columbia Thesis/Project Title: Testing the resolution of particle separation by dielectrophoresis on microfluidic chip Present Position: Electrical engineer, Blackberry QNX
2019/5 - 2022/4 Principal Supervisor	George Ng, University of British Columbia Thesis/Project Title: Building, testing and programming prototype devices for natural gas dectection and THC breathanalysis + Development of a highly-specific exosome isolation and characterization platform Present Position: Quality Assurance Engineer, Firmware
2018/5 - 2019/4 Principal Supervisor	Sheyla Alvarez, University of British Columbia Thesis/Project Title: Development of a user interface to control a handheld version of the natural gas leak detector Present Position: Firmware Developer Level II, Reliable Controls
2018/5 - 2019/4 Principal Supervisor	Macleod Grant, University of British Columbia Thesis/Project Title: Designing of a handheld THC breath analyzer and calibrating the device using data from human subjects Present Position: Fire Protection Designer, Introba
2018/5 - 2019/9 Principal Supervisor	Matthew Shaunessy, University of British Columbia Thesis/Project Title: Microfabrication of microfluidic chips for biomolecule separation Present Position: Naval Architect, Robert Allan Ltd.
2017/9 - 2021/4 Principal Supervisor	Isaac Alexander, University of British Columbia Thesis/Project Title: Building and testing an automated system to calibrate microfluidic-based sensors Present Position: MASc, UBC
2017/5 - 2019/4 Principal Supervisor	David Afantchao, University of British Columbia Thesis/Project Title: Development of a valve system for automatic sensor exposure and recovery Present Position: Robotics Engineer, Fives Group
2017/5 - 2019/4 Principal Supervisor	Niels de Vries, University of British Columbia Thesis/Project Title: Development of an efficient heating element for releasing VOCs from waste liquid samples Present Position: Research Lead, Copperleaf Technologies
2017/5 - 2020/4 Principal Supervisor	Eujin Kim, University of British Columbia Thesis/Project Title: Designing and fabricating microfluidic gas sensors for a wide range of applications in gas detection Present Position: Test Engineer, Greenlight Innovation Corp.
2017/5 - 2021/4 Principal Supervisor	Abigail Logel, University of British Columbia Thesis/Project Title: Development of mass flow controller system for gas sensing Present Position: Mechanical Engineer, CWA Engineers Inc.

2016/5 - 2019/4 Tylor Ho, University of British Columbia
Principal Supervisor Thesis/Project Title: Development of a gas sensor for detection of H2S
Present Position: MASc, UBC

Master's non-Thesis [n=1]

2018/1 - 2020/4 Grant Sonnenberg, University of British Columbia
Principal Supervisor Thesis/Project Title: Development of a novel bio-printer for tissue engineering
Present Position: Project engineer in training, Stantec

Master's Thesis [n=31]

2024/1 - 2026/1 Ibraheem Elbadawi, University of Victoria
Principal Supervisor Thesis/Project Title: Advancing Metal Oxide Gas Sensors through Machine Learning Algorithms for Improved Stability and Selectivity
Present Position: MASc, University of Victoria

2024/1 - 2026/1 Mohammad Hossein Saberi, University of Victoria
Principal Supervisor Thesis/Project Title: Strategizing Humidity Mitigation for Enhanced Performance of Metal Oxide Gas Sensors
Present Position: MASc, University of Victoria

2024/1 - 2026/1 Tyler Hardy, University of Victoria
Principal Supervisor Thesis/Project Title: Innovative On-Chip Encapsulation Platform for Targeted Drug Delivery to the Colon
Present Position: MASc, University of Victoria

2023/1 - 2025/4 Koorosh Abbaspour, University of Victoria
Principal Supervisor Thesis/Project Title: Development of Electrochemical Sensors for Breath Analysis
Present Position: PhD, University of Victoria

2022/1 - 2024/1 Zahra Motamedi, University of Victoria
Principal Supervisor Thesis/Project Title: Microfluidic device/nanomaterial development for exosome isolation
Present Position: MASc, University of Victoria

2022/1 - 2024/1 Amirhossein Alaghmandfard, University of Victoria
Principal Supervisor Thesis/Project Title: Effect of Au Nanoparticles on Mitigating Negative Effect of Humidity on ZnO-Based Gas Sensors
Present Position: N/A, University of Victoria

2022/1 - 2024/1 Mahsa Madadimasouleh, University of Victoria
Principal Supervisor Thesis/Project Title: Microneedles for enhanced drug delivery
Present Position: MASc, University of Victoria

2021/8 - 2023/8 Madison Miller, University of Victoria
Principal Supervisor Thesis/Project Title: Characterization of an Encapsulation Platform for pH-sensitive Delivery to the Colon
Present Position: Quality Assurance Manager, Guidestar

2021/8 - 2023/8 Arian Yeganegi, University of Victoria
Principal Supervisor Thesis/Project Title: Molecularly Imprinted Polymers (MIP) Combined with Raman Spectroscopy for Selective Detection of $\Delta 9$-tetrahydrocannabinol (THC)
Present Position: Textbook Sales Consultant, University of Victoria

2021/1 - 2022/11 Hirad Mashouf, University of Victoria
Principal Supervisor Thesis/Project Title: Development of a disposable and easy-to-fabricate PCR microfluidic device for DNA amplification
Present Position: EIT, Introba

2020/12 - 2022/11 Principal Supervisor	Amin Heydari, University of Victoria Thesis/Project Title: Numerical and experimental investigation of microparticles manipulation using a developed two-stage acoustofluidics platform Present Position: EIT, Principle Capacity Engineering TLM
2020/5 - 2022/4 Co-Supervisor	Reza Zarghanishiraz, University of British Columbia Thesis/Project Title: Development of a ceramic based GC on-chip Present Position: PhD, UBC
2020/5 - 2022/4 Co-Supervisor	Andre Van der Berg, University of British Columbia Thesis/Project Title: Machine learning of data from GIS of water pipeline Present Position: Engineer, Knight Piesold
2020/5 - 2022/4 Principal Supervisor	Mohammadreza Aghel, University of Victoria Thesis/Project Title: A droplet-based microfluidic impedance flow cytometer for detection and quantification of microplastics in water Present Position: EIT, BC Hydro
2020/5 - 2022/4 Principal Supervisor	Peyman Azhdary, University of Victoria Thesis/Project Title: Development of molecularly imprinted polymer (MIP)-based microfluidic gas sensors for Tetrahydrocannabinol (THC) detection Present Position: Production engineer, Western Canoeing Manufacturing Co.
2020/5 - 2022/4 Co-Supervisor	Mohsen Sadeghi, University of British Columbia Thesis/Project Title: Development of artificial olfaction platform for detection of bacteria Present Position: PhD, UBC
2020/1 - 2021/12 Co-Supervisor	Mohammadamir Ghasemian Moghaddam, University of British Columbia Thesis/Project Title: Development of sensing elements for measuring H2S in a liquid phase Present Position: PhD, UBC
2019/9 - 2021/8 Principal Supervisor	Ali Nobakhti, University of British Columbia Thesis/Project Title: Optimization and characterization of atomic-layer-deposited tin oxide thin films metal oxide semiconductor (MOS) sensors to detect polar and non-polar volatile organic compounds Present Position: EIT at FVB Energy Inc., UBC
2019/9 - 2021/8 Principal Supervisor	Hamed Shieh, University of British Colombia Thesis/Project Title: Label-free electrochemical Aptasensor based on gold nanoparticles-modified screen-printed electrodes for detection of cytokines Present Position: PhD, UBCO
2019/9 - 2021/8 Principal Supervisor	Arash K. Jahromi, University of British Columbia Thesis/Project Title: Development of Aptamer-Based Graphene Field-Effect Transistors for Determination of Protein Biomarkers Present Position: PhD, McGill University
2019/9 - 2021/8 Principal Supervisor	Sara Ghaderahmadi, University of British Columbia Thesis/Project Title: Development of Room Temperature H2S Gas Sensors Using Flower-Like ZnO Nanorods Present Position: System test engineer, Ballard Power Systems
2019/9 - 2021/8 Principal Supervisor	Mahan Ghazi, University of British Columbia Thesis/Project Title: Feasibility assessment and development of knowledge, technology, and tools for monitoring natural gas odorants Present Position: Systems engineer, Ekona Power

2019/9 - 2021/8 Principal Supervisor	Emily Earl, University of British Columbia Thesis/Project Title: High-Density Biocompatible Hydrogels for In-Vivo Gastric Acid Relocation Present Position: Lab Operation Manager, University of Victoria
2019/1 - 2021/2 Principal Supervisor	Ali Davoodabadi Farahani, University of British Columbia Thesis/Project Title: Development of an in-situ detector for dissolved gases in liquid waste Present Position: PhD, UBC
2018/9 - 2020/8 Principal Supervisor	Hamed Tahmooressi, University of British Columbia Thesis/Project Title: Multiscale simulation and statistical analysis of nanoparticles size effect on nanofluids effective thermal conductivity Present Position: Sessional Instructor, Columbia College
2018/9 - 2020/8 Principal Supervisor	Adel Yavarinasab, University of British Columbia Thesis/Project Title: Development of impedance-transduced chemiresistors for highly selective electrochemical detection in aqueous media Present Position: PhD, UBC
2018/9 - 2021/2 Co-Supervisor	Mohamed Tarek Aly, University of British Columbia Thesis/Project Title: Microfluidic olfaction detector for outdoor applications : a pattern recognition approach Present Position: Data Annotation Engineer at Noze, Noze
2018/5 - 2020/4 Co-Supervisor	Pranav Ambhorkar, University of British Columbia Thesis/Project Title: Development of an electrospinning system integrated with stereolithographic 3D bioprinting Present Position: Design Engineer, European Space Agency
2018/1 - 2020/4 Co-Supervisor	Matthew Barriault, University of British Columbia Thesis/Project Title: Applications of artificial olfaction and machine learning for detection of volatile gas Present Position: Sofware Engineer, Prairie Robotics
2017/1 - 2020/4 Co-Supervisor	Pamela Ines R. Sanchez, University of British Columbia Thesis/Project Title: Optimization of electrochemical microfluidic biosensor design for point of care devices Present Position: PhD, UBC
2017/1 - 2019/12 Principal Supervisor	Erfan Taatizadeh, University of British Columbia Thesis/Project Title: Development of lab-on-a-chip acoustofluidic platform with a potential application in extracellular vesicles purification Present Position: PhD, UBC

Doctorate [n=20]

2023/9 - 2027/9 Principal Supervisor	Abbas Sabahi, University of Victoria Thesis/Project Title: A Sensitive Electrochemical Biosensor for Simultaneous Detection of Lung Cancer Biomarkers based on Carbon substrates and Metal-Polymer Hybrids Present Position: PhD, University of Victoria
2022/8 - 2026/8 Principal Supervisor	Kaveh Yazdani Motlagh, University of Victoria Thesis/Project Title: Optimization of Microfluidic Encapsulation of Bacteria for Probiotics and Biosensing Present Position: PhD, University of Victoria
2022/6 - 2026/6 Principal Supervisor	Mostafa Azimzadeh, University of Victoria Thesis/Project Title: VOC-based classification of bacterial infection on wound sites (co-supervised with Dr. Mohsen Akbari) Present Position: PhD, University of Victoria

2022/5 - 2026/5 Principal Supervisor	Shima Akar, University of Victoria Thesis/Project Title: Liposome-based encapsulation of pro-neurogenic small peptide ISX-9 Present Position: PhD, University of Victoria
2022/5 - 2026/5 Co-Supervisor	Farnoosh Kalantarnia, University of Victoria Thesis/Project Title: On-chip model of blood brain barrier (co-supervised with Dr. Stephanie Willerth) Present Position: PhD, University of Victoria
2022/1 - 2026/1 Principal Supervisor	Abbas Motalebizadeh, University of Victoria Thesis/Project Title: Low-cost kit for isolation and characterization of microplastics Present Position: PhD, University of Victoria
2020/5 - 2024/4 Co-Supervisor	Thomas Full, University of British Columbia Thesis/Project Title: Development of wireless self-powered sensor for composite fabrication default monitoring Present Position: PhD, UBC
2020/1 - 2024/12 Co-Supervisor	Hamed Hadayeghi, McGill University Thesis/Project Title: Micro-encapsulation using microfluidic devices Present Position: PhD, McGill University
2020/1 - 2024/12 Co-Supervisor	Mohammad Ramezannezhad, University of British Columbia Thesis/Project Title: On-chip Exosome isolation Present Position: PhD, UBC
2020/1 - 2024/12 Co-Supervisor	Jahanbakhsh Jahanzamin, UBC Thesis/Project Title: Development of nano-composite sensing layers for gas sensing Present Position: PhD, UBC
2019/9 - 2024/8 Co-Supervisor	Ali Habiboallahzade, University of British Columbia Thesis/Project Title: Hybrid geothermal systems Present Position: PhD, UBC
2019/9 - 2023/8 Principal Supervisor	Bahram Talebjedi, University of British Columbia Thesis/Project Title: Developing an acoustic-based microfluidics micro/nano scale particle separation and manipulation platform with application for extracellular vesicle isolation Present Position: PDF, TU Delft
2019/9 - 2024/8 Co-Supervisor	Samaneh Daviran, University of British Columbia Thesis/Project Title: Atomic layer deposition for metal oxide semiconductor sensor Present Position: PhD, UBC
2019/9 - 2024/8 Co-Supervisor	Soha Mohajeri, University of British Columbia Thesis/Project Title: Graphene-based flexible sensors for wearable applications Present Position: PhD, UBC
2018/5 - 2022/4 Principal Supervisor	Hamed Mirzaei, University of British Columbia Thesis/Project Title: Development of sensitive/selective microfluidic-based olfaction sensor for detection of hydrogen in hydrogen-enriched-natural gas mixture Present Position: PhD, UBC
2016/9 - 2020/8 Co-Supervisor	George S. Luka, University of British Columbia Thesis/Project Title: On-chip-based biosensors and point-of-care devices for label/PCR-free detection of Cryptosporidium Present Position: PDF, McGill
2016/9 - 2021/1 Principal Supervisor	Yousif Alcheikhhamdon, University of British Columbia Thesis/Project Title: Enhancement of acid gas removal in natural gap process Present Position: Lead process engineer, Worley, UBC

2016/5 - 2020/8 Principal Supervisor	Arash Dalili, University of British Columbia Thesis/Project Title: Development of a point-of-care lab on a chip platform for stem cell separation and sensing Present Position: Senior Research and Development Scientist, MEMS Vision
2016/1 - 2020/8 Co-Supervisor	Kabilan Sakthivel, University of British Columbia Thesis/Project Title: Development of LOC platform for co-calturing cells Present Position: PDF, Lund University
2016/1 - 2019/12 Principal Supervisor	Roya Samanipoor, University of British Columbia Thesis/Project Title: 4-D bio-printing of brain model Present Position: Scientist, Advanced Regenerative Manufacturing Institute (ARMI)

Post-doctorate [n=5]

2022/9 - 2023/3 Principal Supervisor	Sajjad Janfaza, University of Victoria Thesis/Project Title: Development of MIP for propofol detection Present Position: PDF, University of British Columbia
2021/5 - 2026/1 Principal Supervisor	Somayeh Fardindoost, University of Victoria Thesis/Project Title: Developing sensors for detection of analyte of interest Present Position: PDF, University of Victoria
2021/1 - 2022/12 Academic Advisor	Kaveh Moulaee, Universita degli Studi di Messina Thesis/Project Title: GFET sensors for THC detection Present Position: PDF, UBC
2020/9 - 2021/8 Principal Supervisor	Amir Mohammad Sattari, University of British Columbia Thesis/Project Title: Droplet splitting in microfluidics Present Position: PDF, UBC
2019/4 - 2021/4 Principal Supervisor	Sajjad Janfaza, University of British Columbia Thesis/Project Title: Development of microfluidic platforms for micro-encapsulation Present Position: PDF, University of British Columbia

Research Associate [n=5]

2023/6 - 2023/9 Principal Supervisor	Adriaan Frencken, University of Victoria Thesis/Project Title: Chemistry related to gas sensing, microfluidic encapsulation, microplastic detection Present Position: Postdoctoral Fellow, University of Victoria
2023/6 - 2028/6 Principal Supervisor	Ashtyn Gibbs, University of Victoria Thesis/Project Title: Machine learning and AI for gas sensing applications Present Position: Lab Resource Manager, University of Victoria
2023/1 - 2028/1 Principal Supervisor	Jacob Stachowski, University of Victoria Thesis/Project Title: Engineering for gas sensing applications Present Position: Lab Technical Manager, University of Victoria
2022/1 - 2026/1 Principal Supervisor	Emily Earl, University of Victoria Thesis/Project Title: Engineering for Gas Sensing, Microfluidic Encapsulation, and Microparticle Detection Present Position: Lab Operation Manager, University of Victoria
2018/8 - 2023/7 Principal Supervisor	Nishat Tasnim, University of British Columbia Thesis/Project Title: Managing projects and the lab Present Position: Institutional Programs Officer, UBC

Technician [n=2]

2020/1 - 2020/12 Academic Advisor	Seyedehhamideh Razavi, University of Tehran Thesis/Project Title: Micro-encapsulation of probiotics Present Position: Technician, University of Alberta
2019/1 - 2021/3 Principal Supervisor	Adithya Ravishankara, University of British Columbia Thesis/Project Title: Prototype development for commercialization Present Position: Technology Manager, Noze

Event Administration

2023/6 - 2023/6	Host, The Canadian Academy of Engineering, Association, 2023/6 - 2023/6

Editorial Activities

2022/1 - 2027/1	Editorial Board, Scientific Reports, Journal
2018/1 - 2020/12	Editorial Board, Sensors, Journal

Organizational Review Activities

2022/5 - 2024/5	Research oversight committee member, Genomic Solutions for Natural Resources and the Environment Research competition reviewer
2022/1 - 2022/7	Consultant, Brock University Development of the first engineering program (integrated engineering)
2022/2 - 2022/3	External reviewer, University of Waterloo External reviewer of the graduate programs of the department of mechatronics and mechanical engineering

International Collaboration Activities

2015/9 - 2020/11	Collaborator, United States of America I am collaborating and co-supervising a student with Dr. Kahdemhosseini at MIT/Harvard in the area of 4D bioprinting for organ printing
2017/9 - 2019/4	Collaborator, Bangladesh We have started our collaboration with Dr. Billah's team at Khulna University to conduct testing of our patented technology for water quality monitoring in Bangladesh
2017/5 - 2019/4	Collaborator, France I just started collaboration with Dr. Gardan's group at EPF Ecole d'ingénieurs in the area of additive manufacturing and have recently submitted a proposal to French Government related to characterization of heat exchanger developed by 3D printing process.

Committee Memberships

2023/1 - 2024/12	Chair, Executive Leader of Canadian Society of Mechanical Engineering (CSME), Canadian Society of Mechanical Engineering (CSME) Past President

2021/1 - 2022/12	Chair, Executive leader of Canadian Society of Mechanical Engineering (CSME), Canadian Society of Mechanical Engineering (CSME) President
2018/5 - 2020/4	Committee Member, Executive leader of Canadian Society of Mechanical Engineering (CSME), Canadian Society of Mechanical Engineering (CSME) Senior Vice President in charge of membership
2014/5 - 2019/4	Committee Member, Best student paper award, Canadian Society of Mechanical Engineering I am the chair of the committee selecting the best student awards in CSME congress

Presentations

1. (2024). Molecularly Imprinted Polymers in Artificial Olfaction: A Sensory Enhancement Approach. ICONN 2024, Australia
   Main Audience: Researcher
   Invited?: Yes, Keynote?: No
2. (2023). Integrated sensors for application in environmental and clean technology. Clean Energy Research Centre (CERC) Seminar, Canada
   Main Audience: Researcher
   Invited?: Yes, Keynote?: No
3. (2022). Breath sensing for personal health monitoring. UVic Translational Biomedical Engineering Seminar, Canada
   Main Audience: Researcher
   Invited?: Yes, Keynote?: No
4. (2021). Smart sensors for monitoring volatile organic compounds (VOCs). EGBC 2021, Canada
   Main Audience: Researcher
   Invited?: Yes, Keynote?: Yes
5. (2021). Smart sensors for health and safety monitoring. VI ASHRAE and EGBC, Canada
   Main Audience: Researcher
   Invited?: Yes, Keynote?: No
6. (2020). Graphene-coated spandex sensors for composites health monitoring. IEEE Nano 2020, Austria
   Main Audience: Researcher
   Invited?: Yes, Keynote?: No

Broadcast Interviews

2017/07/23 - 2017/07/23	UBC engineers invent 3D-printed device to monitor water quality, News Vancouver, Metro
2016/04/20 - 2016/04/20	UBC researchers develop $15 pot breathalyzer- Device can detect level of pot and alcohol impairment, The Early Edition, CBC News

Publications

Journal Articles

1. Yazdani, K*; Fardindoost, S*; Kalantarnia, F*; Hoorfar, M. (2025). Microfluidic generation of single# and double#core double emulsions for colon delivery. Colloids and Surfaces A: Physicochemical and Engineering Aspects. 727
Published
Refereed?: Yes

2. Azimzadeh, M*; Khashayar, P; Mousazadeh, M; Daneshpour, M; Rostami, M; Goodlett, D; Manji, K; Fardindoost, S; Akbari, M; Hoorfar, M. (2025). Volatile organic compounds (VOCs) detection for the identification of bacterial infections in clinical wound samples. Talanta. 292
Published
Refereed?: Yes

3. Motalebizadeh, M*; Fardindoost, S*; Hoorfar, M. (2025). Peptide-based strategies for detecting microplastics in aquatic systems: A review. Trends in Environmental Analytical Chemistry. 46
Published
Refereed?: Yes

4. Orr, A; Kalantarnia, F*; Nazir, S; Bolandi, B; Alderson, D; O'Grady, K; Hoorfar, M; Julian, L; Willerth, S. (2025). Recent advances in 3D bioprinted neural models: A systematic review on the applications to drug discovery. Advanced Drug Delivery Reviews. 218
Published
Refereed?: Yes

5. Akar, S*; Fardindoost, S*; Hoorfar, M. (2024). High throughput microfluidics-based synthesis of PEGylated liposomes for precise size control and efficient drug encapsulation. Colloids and Surfaces B: Biointerfaces. 238: 113926.
Published
Refereed?: Yes

6. Motalebizadeh, A*; Fardindoost, S*; Hoorfar, M. (2024). Selective on-site detection and quantification of polystyrene microplastics in water using fluorescence-tagged peptides and electrochemical impedance spectroscopy. Journal of Hazardous Materials. 480
Published
Refereed?: Yes

7. Alaghmandfard, A*; Fardindoost, S; Hoorfar, M. (2024). Effect of Au nanoparticles on mitigating the negative impacts of humidity on ZnO gas sensors to detect triethylamine at room temperature. Applied Surface Science Advances. 22
Published
Refereed?: Yes

8. Aghel, M*; Fardindoost, S*; Tasnim, N*; Hoorfar, M. (2024). A Droplet-Based Microfluidic Impedance Flow Cytometer for Detection of Micropollutants in Water. Environments. 11: 96.
Published
Refereed?: Yes

9. Yazdani, K*; Fardindoost, S*; Frencken, A*; Hoorfar, M. (2024). Multi-objective optimization of expansion-contraction micromixer using response surface methodology: A comprehensive study. International Journal of Heat and Mass Transfer. 227: 125570.
Published
Refereed?: Yes

10. Aly, M*; Tasnim, N*; Najjaran, H; Fardindoost, S*; Hoorfar, M. (2024). Pattern recognition system for rapid detection of gases using microfluidic olfaction detector: A case study using methane and ethane. Sensors and Actuators B: Chemical. 403: 135201.
Published
Refereed?: Yes

11. Alaghmandfard, A*; Fardindoost, S*; Frencken, A*; Hoorfar, M. (2024). The next generation of hydrogen gas sensors based on transition metal dichalcogenide-metal oxide semiconductor hybrid structures. Ceramics International.
In Press
Refereed?: Yes

12. Azimzadeh, M*; Askari, E; Khashayar, P; Balgouri, A; Mousazadeh, M; Hoorfar, M; Akbari, M. (2023). 3D Bioprinting for skin models: an overview of recent approaches. International Journal of Bioprinting.
Submitted
Refereed?: Yes

13. Mashouf, H*; Talebjedi, B*; Tasnim, N*; Tan, M; Alousi, S; Pakpour, S; Hoorfar, M. (2023). Development of a disposable and easy-to-fabricate microfluidic PCR device for DNA amplification. Chemical Engineering and Processing-Process Intensification. 189: 109394.
Published
Refereed?: Yes

14. Yeganegi, A*; Fardindoost, S*; Tasnim, N*; Hoorfar, M. (2023). Molecularly imprinted polymers (MIP) combined with Raman spectroscopy for selective Detection of $\Delta 9$-tetrahydrocannabinol (THC). Talanta. 1278: 341749.
Published
Refereed?: Yes

15. Motalebizadeh, A*; Fardindoost, S*; Jungwirth, J*; Tasnim, N*; Hoorfar, M. (2023). Microplastic in-situ detection based on a portable triboelectric microfluidic sensor. Analytical Methods. 15(36): 4718-4727.
Published
Refereed?: Yes

16. Heydari, M*; Talebjedi, B*; Tasnim, N*; Hoorfar, M. (2023). Numerical and experimental investigation of high-resolution manipulation of microparticles using a developed two-stage acoustofluidic platform. Chemical Engineering and Processing-Process Intensification. 189: 109384.
Published
Refereed?: Yes

17. Azhdary, P*; Janfaza, S*; Fardindoost, S*; Tasnim, N*; Hoorfar, M. (2023). Highly selective molecularly imprinted polymer nanoparticles (MIP NPs)-based microfluidic gas sensor for tetrahydrocannabinol (THC) detection. Analytica Chimica Acta. 1278: 341749.
Published
Refereed?: Yes

18. Pakpour, S; Vojnits, K; Alousi, S; Khalid, M; Fowler, J; Wang, J; Tan, A; Lam, M; Zhao, M; Calderon, E; Luka, G*; Hoorfar, M; Kazemian, N; Isazadeh, S; Ashkarran, A; Runstadler, J; Mahmoudi, M. (2023). Magnetic levitation system isolates and purifies airborne viruses. ACS Nano. 17: 13393–13407.
Published
Refereed?: Yes

19. Ghazi, M*; Tasnim, N*; Hoorfar, M. (2022). Selective monitoring of natural gas sulphur-based odorant mixture of t-butyl mercaptan and methyl ethyl sulphide using an array of microfluidic gas sensors. Journal of Hazardous Materials. 438: 129548.
Published
Refereed?: Yes

20. Ghazi, M*; Janfaza, S*; Tahmooressi, H*; Tasnim, N*; Hoorfar, M. (2022). Selective detection of VOCs using microfluidic gas sensor with embedded cylindrical microfeatures coated with graphene oxide. Journal of Hazardous Materials. 424: 127566.
Published
Refereed?: Yes

21. Montazerian, H; Davoodi, E; Baidya, A; Badv, M; Haghniaz, R; Dalili, A*; Milani, A; Hoorfar, M; Annabi, N; Khademhosseini, A; Weiss, P. (2022). Bio-macromolecular design roadmap towards tough bioadhesives. Chemical Society Reviews. 51: 9127-9173.
Published
Refereed?: Yes

22. Luka, G*; Najjaran, H; Hoorfar, M. (2022). On-chip-based electrochemical biosensor for the sensitive and label-free detection of Cryptosporidium. Scientific Reports. 12: 6957.
Published
Refereed?: Yes

23. Talebjedi, B*; Heydari, M*; Taatizadeh, E*; Tasnim, N*; Li, I; Hoorfar, M. (2022). Neural network-based optimization of an acousto microfluidic system for submicron bioparticle separation. Frontiers in Bioengineering and Biotechnology. 10: 878398.
Published
Refereed?: Yes

24. Abedini-Nassab, R; Wirfel, J; Talebjedi, B*; Tasnim, N*; Hoorfar, M. (2022). Quantifying the dielectrophoretic force on colloidal particles in microfluidic devices. Microfluidics and Nanofluidics. 26: 38.
Published
Refereed?: Yes

25. Farahani, A*; Hunter, J*; McIntosh, G*; Ravishankara, A*; Earl, E*; Janfaza, S*; Tasnim, N*; Kadota, P; Hoorfar, M. (2022). Development of an in-situ detector for classification and regression of dissolved gases in liquid waste with application to wastewater monitoring. Sensors and Actuators B: Chemical. 367: 132027.
Published
Refereed?: Yes

26. Samanipour, R*; Tahmooressi, H*; Nejad, H; Hirano, M; Shin, S; Hoorfar, M. (2022). A review on 3D printing functional brain model. Biomicrofluidics. 16: 011501.
Published
Refereed?: Yes

27. Jahromi, A*; Shieh, H*; Low, K; Tasnim, N*; Najjaran, H; Hoorfar, M. (2022). Experimental comparison of direct and indirect aptamer-based biochemical functionalization of electrolyte-gated graphene field-effect transistors for biosensing applications. Analytica Chimica Acta. 1222: 340177.
Published
Refereed?: Yes

28. Mirzaei, H*; Ramezankhani, M; Earl, E*; Tasnim, N*; Milani, A; Hoorfar, M. (2022). Investigation of a sparse autoencoder-based feature transfer learning framework for hydrogen monitoring using microfluidic olfaction detectors. Sensors. 22: 7696.
Published
Refereed?: Yes

29. Taatizadeh, E*; Dalili, A*; Tahmooressi, H*; Tasnim, N*; Li, I; Hoorfar, M. (2022). Nano-scale particle separation with tilted standing surface acoustic wave: experimental and numerical approaches. Particle & Particle Systems Characterization. 2200057: 39.
Published
Refereed?: Yes

30. Talebjedi, B*; Mehrizi, A; Mohseni, S; Tasnim, N*; Hoorfar, M. (2022). Machine learning-aided microdroplets breakup characteristic prediction in flow-focusing microdevices by incorporating variations of cross-flow tilt angles. Langmuir. 38: 10465–10477.
Published
Refereed?: Yes

31. Pourmadadi, M; Dinani, H; Tabar, F; Khassi, K; Janfaza, S*; Tasnim, N*; Hoorfar, M. (2022). Properties and applications of graphene and its derivatives in biosensors for cancer detection: a comprehensive review. Biosensors. 12: 269.
Published
Refereed?: Yes

32. Luka, G*; Samiei, E*; Tasnim, N*; Dalili, A*; Najjaran, H; Hoorfar, M. (2022). Comprehensive review of conventional and state-of-the-art detection methods of Cryptosporidium. Journal of Hazardous Materials. 421: 126714.
Published
Refereed?: Yes

33. Talebjedi, B*; Tasnim, N*; Hoorfar, M; Mastromonaco, GF; De Almeida Monteiro Melo Ferraz, M. (2021). Exploiting microfluidics for extracellular vesicle isolation and characterization: Potential use for standardized embryo quality assessment. Frontiers in Veterinary Science. 7: 1139-1150.
Published
Refereed?: Yes

34. Ghazi, M*; Janfaza, S*; Tahmooressi, H*; Ravishankara, A*; Earl, E*; Tasnim, N*; Hoorfar, M. (2021). Enhanced selectivity of microfluidic gas sensors by modifying microchannel geometry and surface chemistry with graphene quantum dots. Sensors and Actuators B: Chemical. 342: 130050-130059.
Published
Refereed?: Yes

35. Ghaderahmadi, S*; Kamkar, M; Tasnim, N*; Arjmand, M; Hoorfar, M. (2021). A review of low-temperature H2S gas sensors: fabrication and mechanism. New Journal of Chemistry. 45: 17727-17752.
Published
Refereed?: Yes

36. Yavarinasab, A*; Janfaza, S*; Tahmooressi, H*; Ghazi, M*; Tasnim, N*; Hoorfar, M. (2021). A selective polypyrrole-based sub-ppm impedimetric sensor for the detection of dissolved hydrogen sulfide and ammonia in a mixture. Journal of Hazardous Materials. 416: 125892.
Published
Refereed?: Yes

37. Dalili, A*; Montazerian, H*; Sakthivel, K*; Tasnim, N*; Hoorfar, M. (2021). Dielectrophoretic manipulation of particles on a microfluidics platform with planar tilted electrodes. Sensors and Actuators B: Chemical. 329: 129204- 129212.
Published
Refereed?: Yes

38. Talebjedi, B*; Earl, E*; Hoorfar, M. (2021). Robust design of electroosmosis driven self-circulating micromixer for biological applications. International Journal of Biomedical and Biological Engineering. 15(5): 50-53.
Published
Refereed?: Yes

39. Razavi, S*; Janfaza, S*; Tasnim, N*; Gibson, D; Hoorfar, M. (2021). Microencapsulating polymers for probiotics delivery systems: Preparation, characterization, and applications. Food Hydrocolloids. 120: 106882.
Published
Refereed?: Yes

40. Taatizadeh, E*; Dalili, A*; Rellstab-Sánchez, PI*; Tahmooressi, H*; Ravishankara, A*; Tasnim, N*; Najjaran, H; Li, ITS; Hoorfar, M. (2021). Micron-sized particle separation with standing surface acoustic wave—experimental and numerical approaches. Ultrasonics Sonochemistry. 76: 105651.
Published
Refereed?: Yes

41. Sattari, A*, Tasnim, N*, Hanafizadeh, P, Hoorfar, M. (2021). Numerical study of double emulsion droplet generation in a dual-coaxial microfluidic device using response surface methodology. Chemical Engineering and Processing-Process Intensification. 162: 108330-108343.
Published
Refereed?: Yes

42. Sattari, A*; Janfaza, S*; Keshtiban, M; Tasnim, N*; Hanafizadeh, P; Hoorfar, M. (2021). Microfluidic on-chip production of alginate hydrogels using double coflow geometry. ACS omega. 6: 25964–25971.
Published
Refereed?: Yes

43. Azimzadeh, M*; Khashayar, P; Amereh, M; Tasnim, N*; Hoorfar, M; Akbari, M. (2021). Microfluidic-based oxygen (O2) sensors for on-chip monitoring of cell, tissue and organ metabolism. Biosensors. 12: 6.
Published
Refereed?: Yes

44. Dalili, A* and Hoorfar, M. (2021). Sheath-assisted versus sheathless dielectrophoretic particle separation. Electrophoresis. 42: 1570–1577.
Published
Refereed?: Yes

45. Barriault, M*; Alexander, I*; Tasnim, N*; O'Brien, A*; Najjaran, H; Hoorfar, M. (2021). Classification and regression of binary hydrocarbon mixtures using single metal oxide semiconductor sensor with application to natural gas detection. Sensors and Actuators B: Chemical. 326: 129012-129019.
Published
Refereed?: Yes

46. Dixit, K*; Fardindoost, S*; Ravishankara, A*; Tasnim, N*; Mina Hoorfar. (2021). Exhaled breath analysis for diabetes diagnosis and monitoring: relevance, challenges and possibilities. Biosensors. 11: 476.
Published
Refereed?: Yes

47. Luka, G*; Nowak, E; Toyata, Q; Tasnim, N*; Najjaran, H; Hoorfar, M. (2021). Portable on-chip colorimetric biosensing platform integrated with a smartphone for label/PCR-free detection of Cryptosporidium RNA. Scientific Reports. 11: 23192.
Published
Refereed?: Yes

48. Razavi, S*; Janfaza, S*; Tasnim, N*; Gibson, D; Hoorfar, M. (2021). Nanomaterial-based encapsulation for controlled gastrointestinal delivery of viable probiotic bacteria. Nanoscale Advances. 3: 2699-2709.
Published
Refereed?: Yes

49. Talebjedi, B*, Ghazi, M*, Tasnim, N*, Janfaza, S*, Hoorfar, M. (2021). Performance optimization of a novel passive T-shaped micromixer with deformable baffles. Chemical Engineering and Processing-Process Intensification. 163: 108369- 108376.
Published
Refereed?: Yes

50. Yavarinasab, A*; Abedini, M; Tahmooressi, H*; Janfaza, S*; Tasnim, N*; Hoorfar, M. (2021). Potentiodynamic electrochemical impedance spectroscopy of polyaniline-modified pencil graphite electrodes for selective detection of biochemical trace elements. Polymers. 14: 31.
Published
Refereed?: Yes

51. Sattari, A*; Tasnim, N*; Hanafizadeh, P; Hoorfar, M. (2021). Motion and deformation of migrating compound droplets in shear-thinning fluids in a microcapillary tube. Physics of Fluids. 33(5): 053106-05320.
Published
Refereed?: Yes

52. Tahmooressi, H*, Kasaeian, A, Yavarinasab, A*, Tarokh, A, Ghazi, M*, Hoorfar, M. (2021). Numerical simulation of nanoparticles size/aspect ratio effect on thermal conductivity of nanofluids using lattice Boltzmann method. International Communications in Heat and Mass Transfer. 120: 105033-105041.
Published
Refereed?: Yes

53. Davoodi, E; Montazerian, H*; Esmaeilizadeh, R; Darabi, ACh; Rashidi, A; Kadkhodapour, J; Jahed, H; Hoorfar, M; Milani, AS; Weiss, PS; Khademhosseini, A; Toyserkani, E. (2021). Additively manufactured gradient porous Ti–6Al–4V hip replacement implants embedded with cell-laden gelatin methacryloyl hydrogels. ACS Applied Materials & Interfaces. 13(19): 22110-22123.
Published
Refereed?: Yes

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Conference Publications

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2. Motalebizadeh, A*; Fardindoost, S*; Tasnim, N*; Hoorfar, M. (2023). In-situ detection of microplastics based on a portable triboelectric microfluidic sensor. Sensors Technologies International conference - Sensors 2023,
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6. Alcheikhhamdon, Y*; Hoorfar, M. (2022). Hydrogen extraction from H2-enriched natural gas using membrane technology. 12th International Hydrogen Days 2022 (HYTEP 2022),
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Intellectual Property

Patents

1. Apparatus, Systems, and Methods for Hydrocarbon Gas Detection and Differentiation. United States of America. US20230228644. 2021/08/13.
   Patent Status: Granted/Issued
   Inventors: Hoorfar M, Najjaran H, O'brien A*, Tasnim N*, Aly M*, Barriault M*, Ravishankara A*, Alexander I*, Earl E*, Ng G*
2. Fabrication and Use of Flexible Porous Sensor with Adjustable Sensitivity and Selectivity. United States of America. 2861571. 2019/06/14.
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   Inventors: Hoorfar M, Motazerian H*, Montazeri M*, Mirzaei H*, Tasnim N*
3. Hydrogel composites and methods of making same. United States of America. US-2025-0195724-A1. 2023/09/01.
   Patent Status: Granted/Issued
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   Inventors: Earl E*, Hoorfar M

Disclosures

1. An integrated dual sided uniaxial cell stretcher and a stretchable cell microarray platform for real-time microscope imaging and high-throughput screening of 2D/3D cell mechanoresponse
   Disclosed
   Filing Date: 2019/10/11
2. Development of a lab-on-a-chip device for the microencapsulation of probiotics for biopharmaceutical applications
   Disclosed
   Filing Date: 2019/09/07
3. Highly-specific exosome isolation and characterization platform
   Disclosed
   Filing Date: 2019/07/17
4. 3D-printing based fabrication method to develop multifunctional porous scaffolds
   Protected
   Filing Date: 2019/05/17
5. Real-time benchtop, handheld and continuous flow natural gas detectors for field applications
   Disclosed
   Date Issued: 2021/10