

SUMMARY

- Environmental PhD scientist with proven expertise in heavy crude oil upgrading/SAGD optimization/oil sands upgrading/tailings management/separation technologies/environmental site assessment, monitoring, and remediation technologies and regulations/preparation of provincial contaminated site regulations
- Environmental assessment - monitoring and remediation for municipal, industrial and commercial sites
- Extensive international/national field work experience related to the environmental site assessments, monitoring, and remediation projects in different countries (Middle East, Iran; Western Zagros oil fields site assessment, Canada; Shell Albion site assessment, Suncor Energy site assessment, Cenovus Energy at Foster Creek, ...)
- Eligible for registration with APEGA/Professional engineering designation in Alberta
- Strong background in experimental techniques, process engineering and analytical chemistry methods
- Strategic management and ability to technical direction of research projects to success
- Project scheduling, management, supervision and control/proposal development and project planning
- Highly developed communication skills, through diverse oral presentations and journal publications
- Training, high quality research and teaching experience both in the academia and industry
- Integration of emerging technologies, feasibility studies, R&D experience and process development of new products and processes with interface with water industry, government, NGOs and Non-Profit Organizations (NPOs)
- Excellent people leadership & mentoring skills owing to the diverse international volunteer activities in water, wastewater and environmental sector
- Valid driver's license

EDUCATION

Ph.D. Canada Excellence Research Chair (CERC) Graduate Research Fellow, National Institute for Nano Technology (NINT), Chemical Engineering, Sep 2013-Dec 2018, University of Alberta (U of A), GPA: A

Thesis Title: Sustainable SAGD Produced Water Emulsions Oil/Water Separation: O/W Interfacial Study at Micro and Nano Scales

PhD Supervisors: Dr. Thomas Thundat (Professor & Canada Excellence Research Chair in Oil Sands Molecular Engineering) thundat@ualberta.ca (Current: Empire Innovation Professor, University at Buffalo, New York)

M.SC Chemical Engineering, School of Chemical and Petroleum Engineering, Shiraz University (Shiraz U), Shiraz, Iran, Sep 2008- July 2011. GPA: A

B.SC Chemical Engineering, School of Chemical Engineering, University of Sistan and Baluchestan (USB), Zahedan, Iran, Sep 2004- Jan 2008.

AWARDS

- 2018 Water's Next Finalists Award, Top 4 finalists of Water Canada Award nationwide in Canada, in Academia and Research sector, out of 59 nominations. <https://watersummit.ca/2018-waters-next-finalists-announced/>
- GSA Academic Travel Award, Apr 30, 2018
- GRAF, Graduate Research Assistantship Fellowship recipient, 09/2018-10/2018
- Scholarship recipient as the only one student in the Faculty of Engineering (FGSR), U of A, from "Westmoreland Coal Company Graduate Scholarship in Environmental Engineering".
- Awarded as Alberta Regional Representative at Canadian Water Network (CWN). I am the only one accepted from U of A as Alberta Representative at CWN. Awarded as committee member as CWNSYP, was considered the nationwide water leader from U of A.
- Awarded as UL 2016 (University Leader) for South Africa Volunteer Project to lead a group of 12 students from University of Alberta for Environmental and Water Conservation Projects.
- Awarded membership at Golden Key International Honor Society. Golden Key is the world's largest collegiate honor society.
- Awarded 1st rank from School of Chemical and Petroleum Engineering, Shiraz U, 2008-2011.
- Awarded 1st rank Iranian University Entrance Exam, known as Konkour, Fars, Iran, 2008.
- Awarded CWN (Canadian Water Network Alberta Workshop Navigating Resource Development and Water in Northern Alberta) participation in Fort McMurray, Alberta, Canada, 09/2014, Hosted by CWN.

EMPLOYMENT

Industrial Interface & Research

- 09/15-09/16 Cenovus Energy Inc.
Research Engineer
- Project: Accelerated Demulsification of SAGD Oil/Water Emulsions Using Electrical NRAT (Near-field Resonant Auto-Transformer) Systems; Participated in: Design of experiments, data analysis, project planning, scheduling, project management as a research engineer.
- 03/17- date CWN (Canada Water Network)
Alberta Representative/Student and Young Professional Committee (SYPC)
- Organized and participated in; Advanced Water Research Lab (AWRL) tour, 09/2017; E.L. Smith Water Treatment Plant EPCOR Tour, 09/2017; CWN SYPC ACRWC (Alberta Capital Region Wastewater Commission) Plant Tour, 06/2017; World Water Day YEG 2018 at the NAIT Shaw Theater, 03/2018
 - Initiated nationwide (Canada) and regional networking and educational events, developed cross-sector virtual events with guest speakers, acted as the CWN ambassador nation-wide and other water-related initiatives and responsibilities.
- 09/13-09/18 University of Alberta's Chemical Engineering Department, Edmonton, AB
Graduate Research Assistant
Nano Interfaces and Molecular Engineering (NIME) Group, Department of Chemical and Materials Engineering
Interfacial Science and Surface Engineering Laboratory (iSSELab), Department of Mechanical Engineering, 01/2015-12/2016
Advanced Water Research Lab (AWRL), Department of Mechanical Engineering, 04/2016-12/2018, design and implementation of membrane technology and water/wastewater treatment techniques, water testing and analysis, membrane testing, design and analysis of different techniques for de-oiling of SAGD produced water/oil sand-affected produced water
- 09/18-12/18 **Instructor/Teaching Assistant**
CME 694 - Advanced Topics in Chemical and Materials Engineering, CHE 694, Energy and Environment
01/18-04/18 CHE 316-H2 (95199), Equilibrium Stage Process; Multi-phase flows; Combined Lecture and Seminar
09/17-12/17 CHE 374, Computational Methods in Engineering; CFD; Combined Lecture and Seminar
01/17-04/17 CHE 454, Chemical Engineering Project Laboratory
09/16-12/16 MATE 202, Materials Science II
09/16-12/16 CHE 312, Fluid Mechanics
01/16-04/16 CHE 454, Chemical Engineering Project Laboratory
01/15-04/15 CHE 351-H1, Chemical Engineering Laboratory
01/15-04/15 CME 694 - B3, Advanced Topics in Chemical and Materials Engineering
- Shiraz University's Chemical and Petroleum Engineering School, Shiraz, Iran
Teaching Assistant/Instructor
09/08-09/11 Advanced Reactor Design
09/08-09/11 Advanced Mathematics
- Fakoor English Language Institute, Shiraz, Iran
03/11-09/13 English as a Second Language (ESL) Instructor
- 09/11-09/13 Raadman Sanaat Nasr Co.
Process Engineer
- 09/08-09/11 Iranian Falat- Ghareh Oil Company
Research Engineer/Project Manager Assistant
- Project: Ministry of Petroleum applied project under No.50-81-10041 entitled "Synthesis of a Chemical Demulsifier for Demulsification of Heavy Crude Oil"; Participated in: Field tests and field experiments to synthesize and test the efficiency of advanced chemical/biological demulsifier for demulsification of Cheshmeh Khosh heavy crude oils.
 - Cooperated in design control, project manage assistant, continual site visits, checking and approving change orders and price adjustments by the contractor, seasonal reports on project management.
 - Daily checked the project progress according to time scheduling.
- 09/08-09/12 Fars Engineering Research Center (FERC)
Research Engineer; Water/Wastewater Project Manager
- Project: "Application of Gas Hydrates in Municipal-Industrial Wastewater Treatment Plants"; Participated in: protocol development, feasibility study, cost estimation, technical and feasibility studies alternative water transmission, design

and optimization of a pilot plant desalination unit using gas hydrates, estimation of water demand for related cities and villages, report on the material and coating of the water transmission line.

06/06-09/06 Kavar Sugar Cube Factory, Kavar, Fars, Iran

Summer Internship

- Daily site visits (supervisor assistant) of sugar cubes production and quality control (QC) of the final products daily.

06/07-09/07 Hafez Tile Factory, Shiraz, Iran

Summer Internship

- Daily site visits of (supervisor assistant) tile production and quality control (QC) of the final products daily.

COMPUTER SKILLS/CERTIFIED

- Programming Languages: Pascal, Mathematics software tools: MATLAB, COMSOL Multiphysics®, Engineering software: HYSYS, Design Expert, Microsoft Office (Excel, Word, PowerPoint, MS project), LaTeX, Visual Basic.

PUBLICATIONS / PRESENTATIONS

1. M. Razi, H. Nazaripour, B. Sadri, M. Sadrzadeh, T. Thundat, "Development of a novel 3D-printed modified Scheludko-cell: Potential application for SAGD produced water de-oiling thin liquid film study", Colloids and Surfaces A: Physicochemical and Engineering Aspects, Oct 2018.
2. M. Razi, M. Sadrzadeh, T. Thundat, "SAGD produced water Oil/Water separation: A novel modified Sheludko-cell (MSC) for Oil/Water separation study" Poster presentation, 3rd International Conference on Desalination using Membrane Technology, Spain, April 2-5, 2017
3. M. Razi, B. Sadri, M. Sadrzadeh and T. Thundat, "Surfactants on oil/water interface studied by modified Scheludko-cell", The XVIth World Water Congress "Bridging Science and Policy"; is jointly organized by the International Water Resources Association (IWRA), the National Water Commission of Mexico (CONAGUA) and the National Association of Water and Sanitation Utilities (ANEAS), Cancun, Mexico, 29 May-2 June 2017. IWRA World Water Congress Publication.
4. A. Almeida, Universidade Federal da Bahia; M. Razi, J.J. Trivedi, J. Soares, M. Sadrzadeh, "Impact of Reservoir Brine pH and Ionic Concentration on Interfacial Tension of Crude Oil/Water from Reconcavo Basin in Brazil", SPE annual technical conference and exhibition, 24-26 Sep 2018 to be held in Dallas, Texas, USA.
5. M. Razi, S. Sinha, P. R. Waghmare, S. Das and Thomas Thundat, "Effect of Steam-Assisted Gravity Drainage (SAGD) produced water properties on Oil/Water Transient Interfacial Tension", Energy & Fuels (ACS Publications), American Chemical Society (ACS), DOI 10.1021/acs.energyfuels.6b01686.
6. M. Razi, P. R. Waghmare, T. Thundat, "SAGD produced water emulsions interfacial studies" Oral presentation, the Seventh Annual Faculty of Engineering Graduate Research Symposium (FEGRS 2016), June 22-23, 2016 at the University of Alberta, Edmonton, Alberta, Canada.
7. M. Razi, "A novel 3D-printed modified Scheludko-cell: Potential application for SAGD produced water thin liquid film study" Surface Forces and Thin Liquid Films, IACIS2018, 16th Conference of the International Association of Colloid and Interface Scientists, May 21-25, 2018 Rotterdam, The Netherlands.
8. M. Razi, P. R. Waghmare, T. Thundat, "Interfacial phenomena in oil sands industry: Effect of Steam-Assisted Gravity Drainage (SAGD) produced water properties on diluted bitumen/water transient interfacial tension "2016, 90th Colloid and Surface Science Symposium (CSSS), ACS (American Chemical Society), Harvard university, Abstract accepted, held in Cambridge, MA, June 5-8, 2016.
9. M. Razi, F. Khan, T. Thundat, "A feasibility study on the application of microfluidic apparatus for the SAGD produced water treatment"; FEGSR 2014 Conference, University of Alberta, Edmonton, Alberta, June 19, 2014.
10. M. Razi, M.R. Rahimpour, A.H. Jahanmiri, F. Azad "Effect of a Different Formulation of Demulsifiers on the Efficiency of Chemical Demulsification of Heavy Crude Oil", Journal of Chemical and Engineering Data, May 10, 2011.
11. M. Razi, M.R. Rahimpour, A.H. Jahanmiri, "Application of Surfactant Demulsifiers For Treating Heavy Crude Oil", 2nd Surfactant and Detergent Technology Conference, Sharif University of Technology, Tehran, Iran, 2010.
12. M. Razi, M.R. Rahimpour, A.H. Jahanmiri, "synthesis of a new surfactant demulsifier for demulsification of heavy crude oil", 18th International Symposium on Surfactants in Solution, Melbourne, Australia, 2010.
13. R. Rafiei, M. Razi, D.Iranshahi, M. R. Rahimpour, "Dynamic optimization of an oxygen-permeable membrane ethylene oxide (EO) reactor in the presence of long-term catalyst deactivation using DE method" submitted to the Industrial and Engineering Chemistry Journal, American Chemical Society (ACS).
14. M. Razi, Water Talks YEG 2017 oral presenter, Edmonton Students and Young Professionals Branch of the Canadian Water Resources Association (CWRA-SYP Edmonton); February 28, 2017.

EXTRACURRICULAR ACTIVITIES

Referee/Reviewer

- Oceanography & Fisheries Open access Journal (OFOAJ); Oceanography and fisheries open access journal (OFOAJ) is a peer reviewed, premium quality journal that aims to showcase advanced research in the field of oceanography and water related science.

Membership in Learned Societies

- Society Fellows: Golden Key International Honour Society; ACS (American Chemical Society), membership number 30830598; Canadian heavy oil association U of A Chapter (CHOA); CWN (Canada Water Network); CWRA (Canadian Water Resources Association), Students and Young Professionals Edmonton Chapter; SPE (Society of Petroleum Engineers); AIChE (American Institute of Chemical Engineers) University of Alberta Chapter; University of Alberta Chemical Engineering Student Society (ChESS); ICHE (Iranian Society of Chemical Engineers); Canadian Biomaterials Society-Alberta Student Chapter (CBS-ASC).

Professional Qualifications (Certified) & Volunteer Activities

- Shell Canada mining environmental site assessment; Field trip to Fort McMurray; “Fundamentals of Environmental Monitoring”, Workshop organized by COSIA (Canada’s Oil Sands Innovation Alliance); "HSE in oil, gas and petrochemical industries"; "Reservoir Simulation"; "Conventional and Deep Offshore Structures, Pipelines and Floating Systems"; "Basis of Surface Chemistry and Technology of Surfactants"; "MATLAB"; "Simulation of Chemical and Petrochemical process Using HYSYS"; Graduate Ethic Training Course, U of A; Laboratory safety; Construction Safety training systems CSTS-09; Workplace Hazardous Materials Information System (WHMIS), U of A; Basic Fire Extinguisher Training; TEC Edmonton Entrepreneurship; Languages: Persian, English, Arabic, French; Professional frame drum player; 3rd Annual Alberta Nano Research Symposium (ANS 2016); “1st Advanced Surface Science workshop 2016” by iSSELab/KRÜSS GmbH, U of A
- Volunteered for: “The first Lego league judge”; University of Alberta President’s Scholarship Ceremony for Syrian Refugees, Singer, International House; Session chair: FEGRS 2016; Session chair: FEGRS 2014; Ronald McDonald House® Northern Alberta annual block party; Heritage Festival, cultural presenter and kitchen manager; Heritage Festival, Let's Talk Science; Ronald McDonald House® Northern Alberta Red Shoe Crawl; Safe Walk @ U of A; ABCampus; Edmonton Regional Science Fair Judge at NAIT.

REFERENCES: Available on request