

MAHER MAQBOOL SHARIFF, Ph.D.

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OBJECTIVES

Be involved in advanced engineering and technology challenges for the benefit of the oil and gas industry. Produce, develop and implement innovative ideas through research to resolve oil and gas inherent adverse operational concerns; as well as, being involved in optimization process and sustainability best practice. Promote activities to improve the engineering performance of existing exploration and production facilities for both the upstream and the downstream sectors. Deploy my extensive engineering and scientific knowledge and experience, for the advancement of the oil and gas industry.

BIOGRAPHY

Dr. Maher M. Shariff holds a B.S. in Mechanical Engineering from the prestigious Caterpillar College of Engineering and Technology at Bradley University, a M.S. in Mechanical Engineering from Washington University, a Master of Engineering degree from Vanderbilt University, and a Ph.D. in Mechanical Engineering with highest honors from Wichita State University. Dr. Shariff's dissertation work at Wichita State, in association with the National Institute for Aviation Research (NIAR), was in the area of Computational Fluid Dynamics (CFD). After working for Cessna Aircraft Company (a Textron Company) as an Analytical Design Engineer from September 2000 to September 2001, Dr. Shariff joined SABIC Research and Technology Center in Jubail, Saudi Arabia, where he was employed until February 2003. Subsequently, he began his career with Saudi Aramco at their new Research and Development Center, where he currently works as a Senior Research Scientist in the Oil and Gas Treatment Division. In August 2012, he joined Tulsa University Fluid Flow Projects (TUFFP) as a Visiting Research Scholar at The McDougall School of Petroleum Engineering, University of Tulsa. Dr. Shariff's research interests lie in the areas of drilling and completion fluids, gas/oil/water separation, MHD pipe flows with heat transfer and advanced reactor/catalysis design. He is accredited with a U.S. Patent, many refereed journal and conference proceedings publications as well as regional and international presentations. Dr. Shariff is a member of numerous professional societies, including the American Society of Mechanical Engineers, Society of Petroleum Engineers, and Saudi Council of Engineers (Mechanical Engineer Consultant Degree). He is served as the Vice-Chair of the American Society for Mechanical Engineers (Eastern Saudi Arabia Section) in 2006, and in 2012 was elected to serve as the Publicity and Events Director for Saudi Arabian International Chemical Sciences Chapter of American Chemical Society (SAICSC-ACS). He is a member of several honor societies, including Sigma Xi (Scientific Research), Tau Beta Pi (Engineering), and Phi Kappa Phi (Academic).

PROFESSIONAL EXPERIENCE

Saudi Arabian Oil Company (Saudi Aramco), Dhahran, KSA

Feb 2003 to Present

Oil and Gas Treatment, Research and Development Center, Technology Oversight and Coordination

Job Title: Sr. R&D Scientist,

Nov 2018 to present

Oil and Gas Treatment Team

Upstream Oil Processing Division, Process and Control Systems Department, Engineering Services
Job Title: Engineer I,
Apr 2018 to Oct 2018
Oil and Gas Treatment Team

Oil and Gas Treatment, Research and Development Center, Technology Oversight and Coordination
Job Title: Sr. R&D Scientist,
Aug 2013 to Jul 2019
Oil and Gas Treatment Team

Job Title: Visiting Scholar
Aug 2012 to Jul 2013
Tulsa University Fluid Flow Projects (TUFPF), McDougal School of Petroleum Engineering, University of Tulsa, Tulsa, OK, USA

Job Title: R&D Scientist I
Jul 2008 to Jun 2013
Oil and Gas Treatment Team
Fuel Performance Group
Computational Modeling Group
Separation Group

Job Title: R&D Scientist II
Feb 2003 to Jun 2008
Separation Group
Research and Development Division
Drilling and Workover Department:
- Petroleum Engineer
- Assistant Forman Rotary Drilling
Drilling Fluids & Cements Unit

Saudi Arabian Basic Industries Corporation (SABIC), Al-Jubail Industrial City, KSA
Sep 2001 to Feb 2003
Materials and Corrosion, SABIC Technology Center, Research and Technology
Job Title: Senior Mechanical Engineer
Responsibilities: Project Team Leader, Computational Failure Analysis of MTBE Feed header.
Worked as FEA and CFD advisor to the group.
Worked on: Erosion of Ethylene Pyrolysis Furnace Components.
Worked on: Numerical Investigation of Unusual Caustic Corrosion of Type 316 Stainless Steel Transfer Line. The work resulted in two international conference papers.

Cessna Aircraft Company a Textron Company, Wichita, KS, USA
Sep 2000 to Sep 2001
Environmental Control Systems, Utility Systems Engineering, Product Engineering
Job Title: Engineer
Responsibilities: Directly applying knowledge and experience with CFD for both sustaining current aircrafts and developing new aircrafts. Work focused on aircraft pneumatic systems, fuselage pressurization and air-conditioning systems of current and future turbine powered models: Citation X, CJ2. And future jets: Sovereign, CJ3.
Transferred geometries created in CATIA to Fluent environment using STEP method for CFD simulations.
Worked on modeling of 400 Hz noise on Cessna Jet II Williams-Rolls Royce engine using Fluent CFD package.

Numerically simulating airflow and fire extinguisher (Halon) inside the baggage compartment of the Sovereign aircraft.

Wichita State University, Wichita, KS, USA

Aug 1997 to Dec 2000

Job Title: Graduate Teaching Assistant (GTA)

Responsibilities: Assisting instruction of Mechanical Engineering Senior Labs: Tests performed on Centrifugal Pump, Diesel Engine, Methanol Vehicle, and ANOVA Experiment. Assisting instruction of Fluid Mechanics, and Direct instruction of Fluid and Heat Flow Labs

National Institute for Aviation Research (NIAR), Wichita, KS, USA

Oct 1997 to Dec 1999

Job Title: Graduate Research Assistant (GRA)

Responsibilities: Worked on a Computational Fluid Dynamics research project funded by a National Science Foundation EPSCoR grant

Wichita State University, Wichita, KS, USA

Aug 1996 to Jun 1997

Job Title: Graduate Assistant (GA)

Responsibilities: Assisting instruction of Fluid Mechanics; grading homework, proctoring exams, monitoring the M.E. Department computer facilities

Brandon Engineering, St. Louis, MO, USA

Summer 1992

Job Title: Research Assistant (RA)

Responsibilities: Computations were performed on numerous air duct configurations, in collaboration with the NASA-Lewis Research Center, Ohio

Washington University, St. Louis, MO, USA

Aug 1991 to May 1992

Job Title: Teaching Assistant (TA)

Responsibilities: Assisting instruction of Thermodynamics and Energetics, Grading homework and exams, proctoring exams, tutoring and small group teaching

EDUCATION

DOCTORAL DEGREE (Ph.D.)

Wichita State University

Wichita, Kansas

17 December 2000

Mechanical Engineering

Major: Fluid Mechanics

Minor: Heat Transfer

Minor: Mathematics

Dissertation Sponsored by EPSCoR, an NSF Grant, and the National Institute for Aviation Research (NIAR), Title: "Streamwise Computation of Parabolized Internal Viscous Flows with Heat Transfer."

MASTERS DEGREE (M.Eng.)

Vanderbilt University

Nashville, Tennessee

9 August 1996

Mechanical Engineering

Major: Thermo-fluids

Minor: Electrical Engineering

Minor: Mathematics

Project Sponsored by Engelhard Corporation (now BASF), Title: "Numerical Simulation of Newtonian Fluid Flow through a Multiple Channel Honeycomb Monolithic Structure."

MASTERS DEGREE (M.S.M.E.)

Washington University

St. Louis, Missouri

17 May 1991

Mechanical Engineering

Major: Applied Mechanics

Minor: Mathematics

BACHELORS DEGREE (B.S.M.E.)

Bradley University

Peoria, Illinois

13 May 1989

Mechanical Engineering

Sr. Project Sponsored by The Boeing Company, Title: "Mechanical Properties of Steel Pellets in Particulate Fluidized Bed Fixtures."

MEMBERSHIPS AND HONORS

Received a 24 K Golden Leaf award on the 16th of October 2019 for my involvement with LEWAS committee ([Leadership Excellence for Women Awards & Symposium](#))

Invited to the Leadership Excellence for Women Awards & Symposium Committee (LEWAS 2019), February 28, 2019

Received a Certificate of Appreciation for being a finalist in the Leadership Excellence for Women Awards (LEWAS) - Corporate Champion Recognition, for promoting inclusion of women and diversity in the workplace. Took place at the Gala Dinner organized by LEWAS in the Kingdom of Bahrain, October 23, 2018

Recognized as Computational Modeling Specialist by the Saudi Aramco Specialist Development Program (SDP) board members. The 2018 SDP Graduation Ceremony was held on February 22, 2018

Received a Saudi Aramco Human Resources Recognition Certificate for Participation in Women Development and Diversity Division (WD&DD) Mentorship Program, served as a mentor from April 6, 2016 - April 5, 2017. The honor was received in April 2017

Manufacturing Leadership Awards Frost & Sullivan 2016

Engineering & Production

Technology Leadership Award

Presented to Saudi Aramco

(Novel Separator Inlet Device Project)

United States of America, March 2016

Global Human Resource Development Award 2015

International Federation of Training and Development Organizations (IFTDO)

Saudi Aramco Awarded Certificate of Merit in HRD Best Practice Category for 'Community of Commitment and Practice: Working Towards Saudi Aramco's 2020 Vision' Project

Kuala Lumpur, Malaysia August 26, 2015

Received a Research & Development Center Recognition Certificate CoCP FOUNDING MEMBER for

dedication in helping R&DC to become a learning organization, by establishing its first Community of Commitment and Practice (CoCP).
Achievement, Department Level, The certificate was signed by our manager, Dr. Ashraf Al Ghazzawi.
December 9, 2013

Received a Research & Development Center Recognition Certificate Best Idea Deployer, in recognition of my effort for designing an innovative inlet device for multiphase separation vessels using computational simulation of Gas/Liquid flows.
Achievement, Department Level, The certificate was signed by our manager, Mr. Naser A. Al-Wohaibi.
October 4, 2009

American Chemical Society (ACS). Member 2006
Events and Program Director of Saudi Arabian International Chemical Sciences Chapter of American Society of Chemistry (SAICSC-ACS)

Society of Petroleum Engineers (SPE). Member 2004

Sigma Xi, The Scientific Research Society. Full Member, University of Kansas Chapter 2001

Pi Mu Epsilon, Mathematics Honor Society. Member, Wichita State University Chapter 2000

Pi Tau Sigma, Mechanical Engineering Honor Society. Member, Wichita State University Chapter
December 3, 1999

Tau Beta Pi, Engineering Honor Society. Member, Wichita State University Chapter December 3, 1999

Phi Kappa Phi, Academic Honor Society. Member, Wichita State University Chapter March 13, 1999

American Society of Mechanical Engineers (ASME) Member July 7, 1989
Vice-Chair of ASME Eastern Saudi Arabia Section 2006

PUBLICATIONS AND PRESENTATIONS

- 1) Albluwi, Saif F., Vilas S. Koleswar, Maher M. Shariff, Lanre M. Oshinowo, CFD improves water separation efficiency in wet crude tanks, Saudi Aramco confirmed that inlet distributor design on an existing low-pressure degassing tank (LPDT) was the root cause of poor water separation at its gas-oil separation plant (GOSP). Saudi Aramco, Dhahran, KSA, published by the Oil and Gas Journal, March 2, 2020.
- 2) Shariff, Maher Maqbool, Regis Didier Vilagines, Lanre M. Oshinowo, Method and Apparatus for Stabilizing Gas/Liquid Flow in a Vertical Conduit, Saudi Aramco R&D Center, Dhahran, KSA, Application number: 15/469,906, Publication number: US 2018/0275686 A1, Filing date: March 27, 2017.
- 3) Saifuddin, Irfani M., Yasmin A. Aljedawi, Maher M. Shariff, and Abdulaziz A. Subaie, Seamless Integration of Structured and Unstructured Reservoir Simulation Data - A Case Study, accepted for publication and presentation at Petroleum Network Education Conference (PNEC), Houston, TX, May 16-18, 2017.
- 4) Shariff, Maher M., and Lanre M. Oshinowo, Debottlenecking Water-Oil Separation with Increasing Water Flow Rates in Mature Oil Fields, 5th Water Arabia 2017 Conference and Exhibition, Al-Khobar, Saudi Arabia, October 17-19, 2017.

- 5) Al-Rashed, Fahad S., and Maher M. Shariff, Parallel Multiphase Flow Software for Solving The Navier-Stokes Equations, 12th International Conference on Computational Fluid Dynamics In the Oil & Gas, Metallurgical and Process Industries, Trondheim, Norway, May 30-June 1, 2017.
- 6) Akhras, Abdul Rahman Zafer, Regis Didier Vilagines, Maher Maqbool Shariff, Apparatus for Separation of Gas-Liquid Mixtures and Promoting Coalescence of Liquids, Saudi Aramco R&D Center, Dhahran, KSA, The Patent Office of Cooperation Council for the Arab States of the Gulf (GCC), Patent No.: GC0003781, Number of the Decision to Grant the Patent:15/64940, Date of the Decision to Grant the Patent: August 23, 2015. Date of Publishing the Grant of the Patent: March 23, 2016.
- 7) Shariff, Maher M., Regis D. Vilagines, and Khalid N. Alammar, Numerical Analysis of Heat Transfer in Circular Ducts Subjected to Magnetohydrodynamic Forces, Saudi Aramco Journal of Technology (JOT), Summer 2015.
- 8) Shariff, Maher M., Regis D. Vilagines, Khalid N. Alammar, Numerical Analysis of Heat Transfer In Circular Ducts Subjected To Magnetohydrodynamic Forces, Heat Exchange Engineering Conference, Training and Exhibition, Manama, Bahrain, October 19-21, 2014.
- 9) Akhras, Abdul Rahman Zafer, Regis Didier Vilagines, Maher Maqbool Shariff, Apparatus for Separation of Gas-Liquid Mixtures and Promoting Coalescence of Liquids, Saudi Aramco R&D Center, Dhahran, KSA, US Patent number: US8337603 B2, Publication type: Grant, Application number: 13/085,076, Issue date: December 25, 2012.
- 10) Shariff, Maher M., Numerical Investigation of Fluid and Heat Flows In Circular Ducts Under the Influence of Transverse Magnetic Fields, The McDougall School of Petroleum Engineering's Graduate Seminar, University of Tulsa, Tulsa, OK, USA, November 30, 2012.
- 11) Alammar, Khalid N., Regis D. Vilagines, Maher M. Shariff, Zakariya M. Kaneesamkandi, Shaker S. Abdullah, Simulation of Fully-Developed Average Turbulent MHD Pipe Flow with Heat Transfer, ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, TX, USA, November 9-15, 2012.
- 12) Shariff, Maher M., Effects of MHD Forces on Fluid and Heat Flows in Pipes, 2012 Training Workshop, Tulsa University Fluid Flow Projects (TUFPF), Tulsa, OK, USA, October 15, 2012.
- 13) Kaneesamkandi, Zakariya M., Maher M. Shariff, Khalid N. Alammar and Regis D. Vilagines, Heat Transfer in Magnetohydrodynamic Fluid Flows - A Review, Research Journal of Applied Sciences, Engineering and Technology, Maxwell Science Publication, 4(15): 2412-2421, Published: August 1, 2012.
- 14) Alammar, Khalid N., Maher M. Shariff, Regis D. Vilagines, Zakariya M. Kaneesamkandi, and Shaker S. Abdullah, Simulation of Fully-Developed Turbulent MHD Pipe Flow, The 2012 World Congress in Computer Science, Computer Engineering, and Applied Computing, Las Vegas, NV, USA, July 16-19, 2012.
- 15) Alammar, Khalid N., Maher M. Shariff, Regis D. Vilagines, Zakariya M. Kaneesamkandi, and Shaker S. Abdullah, Simulation of Fully-Developed Turbulent MHD Pipe Flow, The 2012 World Congress in Computer Science, Computer Engineering, and Applied Computing, Las Vegas, NV, USA, July 16-19, 2012.
- 16) Akhras, Abdul Rahman Zafer, Regis Didier Vilagines, Maher Maqbool Shariff, Apparatus for Separation of Gas-Liquid Mixtures and Promoting Coalescence of Liquids, Saudi Aramco R&D Center, Dhahran, KSA, Application number: 13/085,076, Publication number: US 2011/0247500 A1, Filing date: April 12, 2011.

- 17) Shariff, Maher M., Effect of Lorentz Force on Flow and Heat Transfer Characteristics in Pipes: A Numerical Study, The Lorentz Force University Collaboration Program (UCP) with King Saud University, 2011 R&D Technical Exchange Forum, Dhahran, KSA, June 25-26, 2011.
- 18) Shariff, Maher M., Numerical Modeling in R&D Center Infrastructure & Capability. Center Communication Meeting (CCM), R&D Saudi Aramco Center, Dhahran, KSA, August 10, 2009.
- 19) Shariff, Maher M., Abdul Rahman Z. Akhras, Regis D. Vilagines, Computational Research Laboratory & Current CFD Efforts at R&D Center, Saudi Aramco R&D Center, Dhahran, KSA, FOCUS, Saudi Aramco Research & Development Center Newsletter, Spring 2009.
- 20) Shariff, Maher M., David R. Nakamura, Mengjiao Yu, and Nicholas E. Takach, An Experimental Study of Hole Cleaning under Simulated Downhole Conditions, Selected as Lead Article, Saudi Aramco Journal of Technology (JOT), Winter 2007.
- 21) Yu, Mengjiao, SPE, and Nicholas E. Takach, SPE, University of Tulsa; David R. Nakamura, SPE, BP; and Maher M. Shariff, SPE, Saudi Aramco, An Experimental Study of Hole Cleaning Under Simulated Downhole Conditions, SPE Paper 109840, 2007 SPE Annual Technical Conference and Exhibition held in Anaheim, CA, USA, November 11-14, 2007.
- 22) Shariff, Maher M., Ahmad A. Bahamdan, Milind M. Vaidya, and Hazim H. Abass, Evaluation of Chemical and Mechanical Properties of Drilling Beads Mud Additive, Saudi Aramco R&D Center, Confidential Internal Report (Project # TSP-2005/0510), Dhahran, KSA, May 2006.
- 23) Shariff, Maher M. (Saudi Aramco), and Luai M. Al-Hadhrami (KFUPM), Numerical Modeling of Heat Transport Enhancement in Dimpled Rectangular Turbine Cooling Channels, Saudi Aramco R&D Center, Dhahran, Saudi Arabia. 4th International Conference on Computational Heat and Mass Transfer (ICCHMT), Paris-Cachan, FRANCE, May 17-20, 2005.
- 24) Shariff, Maher M. and Saad M. Al-Shiha, Introduction to Mechanical Engineering Concepts & Applications, Saudi Aramco R&D Center and Consulting Services Department, Dhahran, Saudi Arabia. Mechanical Engineering Department, King Abdulaziz University (KAU), ASME International Schools Outreach Program, Jeddah, KSA, May 10, 2005.
- 25) Shariff, Maher M. (Saudi Aramco), Numerical Analysis of Unusual Caustic Corrosion of Type 316 Stainless Steel Transfer Line. Mechanical Engineering Department Weekly Seminars, KFUPM, Dhahran, KSA, September 21, 2004.
- 26) Shariff, Maher M. (Saudi Aramco), and Christian E. van der Westhuizen (SABIC), Numerical Investigation of Unusual Caustic Corrosion of Type 316 Stainless Steel Transfer Line, SABIC R&T Center, Jubail, KSA. 4th European Thermal Sciences Conference (ETSC), Birmingham, UK, March 29-31, 2004.
- 27) van der Westhuizen, Christian E. and Maher M. Shariff, "Unusual Caustic Corrosion of 316 Stainless Steel Transfer Line," Saudi Arabian Basic Industries Corporation (SABIC), Riyadh, KSA. Petrotech 2003, The 4th Middle East Refining and Petrochemicals Exhibition and Conference, Manama, BAHRAIN, 29th September - 1st October 2003.
- 28) Shariff, Maher M. (Cessna Aircraft Company), and Mahesh S. Greywall, Streamwise Computation of Parabolized Internal Compressible Turbulent Flows with Heat Transfer, Department of Mechanical Engineering and National Institute for Aviation Research (NIAR), Wichita State University, Wichita, KS., 35th ASME National Heat Transfer Conference (NHTC), Anaheim, CA, USA, June 10-12, 2001.
- 29) Shariff, Maher M., and Mahesh S. Greywall, Streamwise Computation of Parabolized Internal Turbulent Flows with Heat Transfer, Department of Mechanical Engineering and National Institute

for Aviation Research (NIAR), Wichita State University, Wichita, KS, 39th AIAA Aerospace Sciences Meeting and Exhibit, Reno, NV, USA, January 8-11, 2001.

- 30) Shariff, Maher M., and Mahesh S. Grewwall, Streamwise Computation of Parabolized Axisymmetric Laminar Flows with Heat Transfer, Department of Mechanical Engineering and National Institute for Aviation Research (NIAR), Wichita State University, Wichita, KS., 2000 ASME Fluids Engineering Division Summer Meeting (FEDSM), Boston, MA, USA, June 11-15, 2000.
- 31) Shariff, Maher M., Streamwise Computation of Parabolized Internal Viscous Flows with Heat Transfer, Doctoral Dissertation, Department of Mechanical Engineering, Wichita State University, Wichita, KS, USA, December 2000.
- 32) Shariff, Maher M., Hussein J. Hussein, Kenneth A. Debelak (Chemical Engineering), and John W. Williamson, Numerical Simulation of Newtonian Fluid Flow through a Multiple Channel Honeycomb Monolithic Structure, Department of Mechanical Engineering, Vanderbilt University, Nashville, TN., 1996 ASME Fluids Engineering Division Summer Meeting (FEDSM), San Diego, CA, USA, July 7-11, 1996.