Name	DR. AJMAL SHAH
Personal	**Date of Birth:** 12th February, 1974. **Designation:** Professor **Institution:** Pakistan Institute of Engineering and Applied Sciences, PIEAS, Nilore, Islamabad, Pakistan. **Email:** ajmal@pieas.edu.pk ; ashahpk1@gmail.com **Office Phone:** +92-51-2207381-4 (Ext: 3323) **Mobile:** +92-346-5006305
Education	**Post-Doctorate**　　　　　　**2015 - 2016** 　• "DNS Simulations for Combustion in Porous Media" from "Institut de Mécanique des Fluides de Toulouse, France" **PhD, Nuclear Engineering**　　**2007 - 2012** 　• Pakistan Institute of Engineering & Applied Sciences (PIEAS), Nilore, Islamabad, Pakistan 　• Thesis: Thermal hydraulic analysis of steam jet pump **M.S. Nuclear Engineering**　　**2000 - 2002** 　• Pakistan Institute of Engineering & Applied Sciences (PIEAS), Nilore, Islamabad, Pakistan 　• **Thesis:** Up-gradation and Benchmarking of a CFD code (written in FORTRAN) for a two dimensional square cavity flow 　• 1st Position (Gold Medalist) **B.Sc Agricultural Engineering**　　**1994 - 1999** 　• University of Engineering & Technology Peshawar, Pakistan 　• **Thesis:** Quality Analysis of Drinking Water 　• 81.0 % marks, with Honor, 1st Position
Positions Held	Professor, PIEAS　　　　　　July 05, 2019 to date Associate Professor, PIEAS　　　Nov. 01, 2016 Assistant Professor, PIEAS　　　April 20, 2012 Senior Engineer, PAEC　　　　Dec. 01, 2004 Assistant Engineer, PAEC　　　Sept. 26, 2002

Publications	1. Ahmed A, **Shah A**, Qureshi K, Waheed K, Siddique W, Irfan N, Ahmed M, Farooq A: **Investigation of iodine removal efficiency in a venturi scrubber using mass transfer model for CFD**. *Progress in Nuclear Energy* **121**, (2020)
	2. Khan A, Takriff MS, Sanaullah K, Zwawi M, Algarni M, Felemban BF, Bahadar A, **Shah A**, Rigit ARH: **Periodic compression and cavitation induced shear between steam-water two-phase flows for bio-materials degradation**. International Journal of Environmental Science and Technology 2020.
	3. Khan A, Takriff MS, Rosli MI, Othman NTA, Sanaullah K, Rigit ARH, **Shah A**, Ullah A: **Flow characteristics within the wall boundary layers of swirling steam flow in a pipe comprising horizontal and inclined sections**. Korean Journal of Chemical Engineering 2020, **37**(1):19-36.
	4. Khan A, Takriff MS, Rosli MI, Othman NTA, Sanaullah K, Rigit ARH, **Shah A**, Ullah A, Mushtaq MU: **Turbulence dissipation & its induced entrainment in subsonic swirling steam injected in cocurrent flowing water**. *International Journal of Heat and Mass Transfer* 2019, **145**:118716.
	5. Ashfaq T, Qureshi K, **Shah A**, Waheed K, Siddique W, Irfan N, Ahmed M, Farooq A: **CFD investigation of iodine mass transfer in venturi scrubbing solution of Filtered Containment Venting System**. *Progress in Nuclear Energy* 2019, **111**:195-204.
	6. Riaz A, **Shah A**, Basit A, Iqbal M: **Experimental Study of Laminar Natural Convection Heat Transfer from Slender Circular Cylinder in Air Quiescent Medium**. In: *2019 16th International Bhurban Conference on Applied Sciences and Technology (IBCAST): 8-12 Jan. 2019 2019*. 719-724.
	7. Ahmed S, Mohsin H, Qureshi K, **Shah A**, Siddique W, Waheed K, Irfan N, Ahmad M, Farooq A: **Investigation of dust particle removal efficiency of self-priming venturi scrubber using computational fluid dynamics**. *Nuclear Engineering and Technology* 2018, **50**(5):665-672.
	8. Nawaz R, Nazir MZ, **Shah A**, Qurashi K, Basit A, Khan R: **Investigation of Hydrogen Distribution within the Containment of 330 MWe PWR using CFD**. *International Journal of Nuclear Power* 2018, **63**(10):539-545.
	9. Riaz A, Basit A, Ibrahim A, **Shah A**, Basit MA: **A three-dimensional CFD and experimental study to optimize naturally air-cooled electronic equipment enclosure: Effects of inlet height, heat source position, and buoyancy on mean rise in temperature**. *Asia-Pacific Journal of Chemical Engineering* 2018, **13**(1):e2145.
	10. **Shah A**: **study of steam-water direct-contact condensation in steam jet pump**. *International journal of fluid mechanics research* 2017, **44**(6):487-497.
	11. Riaz A, Ibrahim A, Basit A, **Shah A**, Basit MA: **Numerical simulation of naturally air cooled electronic equipments casing**. In: *2017 14th International Bhurban Conference on Applied Sciences and Technology (IBCAST): 10-14 Jan. 2017 2017*. 497-502.
	12. Khan A, Sanaullah K, Sobri Takriff M, Hussain A, **Shah A**, Rafiq Chughtai I: **Void fraction of supersonic steam jet in subcooled water**. *Flow Measurement and Instrumentation* 2016, **47**:35-44.
	13. Khan A, Sanaullah K, Takriff MS, Zen H, Rigit ARH, **Shah A,** Chughtai IR: **Numerical and experimental investigations on the physical characteristics of supersonic steam jet induced hydrodynamic instabilities**. *Asia-Pacific Journal of Chemical Engineering* 2016, **11**(2):271-283.
	14. Khan A, Sanaullah K, Takriff MS, Zen H, Rigit ARH, **Shah A**, Chughtai IR, Jamil T: **Pressure stresses generated due to supersonic steam jet induced hydrodynamic instabilities**. *Chemical Engineering Science* 2016, **146**:44-63.
	15. Qamar SA, Sohail A, Qureshi K, **Shah A**, Irfan N: **Dust particle collection efficiency of venturi scrubber with varying number of orifices using CFX**. In: *2016 International Conference on Emerging Technologies (ICET): 18-19 Oct. 2016 2016*. 1-6.
	16. Sanaullah K, Khan A, Takriff MS, Zen H, **Shah A**, Chughtai IR, Jamil T, Fong LS, Haq NU: **Determining potential of subcooling to attenuate hydrodynamic**

instabilities for steam–water two phase flow. *International Journal of Heat and Mass Transfer* 2015, **84**:178-197.

17. Khan A, Haq NU, Chughtai IR, **Shah A,** Sanaullah K: **Experimental investigations of the interface between steam and water two phase flows**. *International Journal of Heat and Mass Transfer* 2014, **73**:521-532.

18. **Shah A**, Chughtai IR, Inayat MH: **Experimental and numerical investigation of the effect of mixing section length on direct-contact condensation in steam jet pump**. *International Journal of Heat and Mass Transfer* 2014, **72**:430-439.

19. Khan A, Sanaullah K, Takriff MS, Zen H, Fong LS, **Shah A**: **CFD based Hydrodynamic Parametric study of inclined injected Supersonic steam into subcooled water** In: *International Engineering Conference, Energy and Environment (ENCON 2014); Malaysia*. Research Publishing 2014.

20. **Shah A**, Chughtai IR, Inayat MH: **Experimental study of the characteristics of steam jet pump and effect of mixing section length on direct-contact condensation**. *International Journal of Heat and Mass Transfer* 2013, **58**(1):62-69.

21. **Shah A**, Khan AH, Chughtai IR, Inayat MH: **Numerical and experimental study of steam-water two-phase flow through steam jet pump**. *Asia-Pacific Journal of Chemical Engineering* 2013, **8**(6):895-905.

22. Malik AH, **Shah A**, Khushnood S: **CFD analysis of heat transfer within a bottom heated vertical concentric cylindrical enclosure**. *Journal of Physics: Conference Series* 2013, **439**(1):01-15.

23. Malik AH, Khushnood S, **Shah A**: **Experimental and numerical study of buoyancy driven flow within a bottom heated vertical concentric cylindrical enclosure**. *Natural Sciences* 2013, **5**(7): 771-782.

24. Malik AH, Alvi MSI, Khushnood S, Mahfouz FM, Ghauri MKK, **Shah A**: **Experimental study of conjugate heat transfer within a bottom heated vertical concentric cylindrical enclosure**. *International Journal of Heat and Mass Transfer* 2012, **55**(4):1154-1163.

25. Malik AH, Alvi MSI, Khushnood S, Mahfouz FM, Ghauri MKK, **Shah A**: **Numerical study of conjugate heat transfer within a bottom heated cylindrical enclosure**. In: *Proceedings of 2012 9th International Bhurban Conference on Applied Sciences & Technology (IBCAST): 9-12 Jan. 2012 2012*. 213-220.

26. **Shah A**, Chughtai IR, Inayat MH: **Experimental and numerical analysis of steam jet pump**. *International Journal of Multiphase Flow* 2011, **37**(10):1305-1314.

27. **Shah A**, Chughtai IR, Inayat MH: **Numerical Simulation of Direct-contact Condensation from a Supersonic Steam Jet in Subcooled Water**. *Chinese Journal of Chemical Engineering* 2010, **18**(4):577-587.

Research or Creative Accomplishments	• Developed a **computational model for Steam-Water direct-contact condensation**. This model is a pioneer work in the field of CFD and was followed by many international researchers. • Development of **Iodine scrubbing computational model for scrubbing Iodine from containment air through liquid solution**. There was no computation model available for scrubbing of iodine before and I did the pioneer work in the development of this model. • Developed the **characteristic curves of Steam Jet Pump**, which are used for transporting radioactive and hazardous liquid from one place to another. • Wrote a book chapter in International Atomic Energy Agency (IAEA) Training Course Series 69, **"Passive Safety Systems in Water Cooled Reactors: An Overview and Demonstration with Basic Principle Simulators"**, VIENNA 2019. • Supervised cumulatively more than 35 BS, MS and PhD Thesis Projects.
Selected Professional Presentations	• Three Lectures In **"CASM-PIEAS Workshop on Computational Fluid Dynamics and Scientific Computing"**(November 8-9, 2013), LUMS, Lahore" on; i). **Review of Numerical Methods** ii). **Applications of CFD (Modeling and Simulation of DCC Problem)** iii). **Multiphase Flow Modeling** • Keynote lecture on "**Steam Jet Pump**", in Symposium on Advancements in Mechanical Engineering (SAME), PIEAS Engineering Research Summit 2014(PERS' 14). • Shah A, "i**nvestigation of steam-water interface within the mixing section of steam jet pump"**, 1st International Young Engineers Convention (FEIIC IYEC-2014)(April 18-20, 2014) • Keynote lecture on "**CFD Methodology and a case study**", in Symposium on Advancements in Mechanical Engineering (SAME-2016), PIEAS. • Keynote Lecture on **"Governing Equations in Two-Phase Natural Circulation Flows"** in IAEA/PIEAS National Training Course on Advanced WCRs: Physics, Technology, Passive Safety, and Basic Principle Simulators, 2018. • Keynote lecture on "S**team-water direct-contact condensation (DCC); experiments, mathematical modeling and CFD simulations**", in International Symposium on Advancements in Mechanical Engineering (ISAME'19), PIEAS. • Keynote Lecture on **"Mathematical modeling of steam-water direct-contact condensation (DCC)"**, First national conference on computational mechanics (NCCM)(April 02-03, 2019) PIEAS.