



C.V.

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Head of mechanical engineering department in TIMS

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Rector of Tabbin Institute for Metallurgical Studies, (TIMS) from 2016 to 2020.

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Personal Information:

Date of Birth: 15 December 1962 Nationality: Egyptian Marital Status: Married

Education:

- ◆ **Professor of Mechanical Engineering in (18/5/2015).**
- ◆ **Associate Professor** of Mechanical Engineering (17/12/2007).
- ◆ **Ph.D.**, Cairo University (2000) in Mechanical Power Engineering.
- ◆ Thesis Title “An Experimental Investigation of Heat Transfer to laminar and Turbulent Pulsating Pipe Flow”
- ◆ **M. Sc.**, Cairo University (1991) in Mechanical Power Engineering.
- ◆ Thesis Title “An Experimental Study of Heat Transfer and Flow in Channels with Streamwise – Repeated Flow”
- ◆ **B.Sc.**, degree in Mechanical Power Engineering, Faculty of Engineering Zagazig University, 1985.

Language Skills:

Arabic (native speaker) - English (excellent)

Industrial Experience & Consultation

- ◆ Consultant for Management of Small and Medium Industries
- ◆ **Energy Conservation and management**
- ◆ **Solar systems and desalination water**
- ◆ Cement Industry & Rotary Kilns Performance Tune-up
- ◆ Industrial Furnaces - Improving of heat transfer media
- ◆ Boilers operation, Inspection and maintenance
- ◆ Burners Inspection and maintenance
- ◆ Preparing of Technical reports for furnaces & Boilers
- ◆ Steam and Gas turbines operation
- ◆ Fuel & Combustion - Heat exchangers

Teaching Experience: *Academic Courses (post graduate)*

- ◆ Heat Transfer - Fluid Mechanics – Cement rotary kilns
- ◆ Design and thermal performance of industrial furnaces
- ◆ Industrial Furnaces - Combustion / Cogeneration
- ◆ Steam and steam systems - Energy Management
- ◆ Measuring instruments - Aerodynamics & Thermodynamics
- ◆ Insulation and refractories - Course projects

Teaching Experience: Academic Courses (under graduate)

- ◆ Heat Transfer - Fluid Mechanics – Power station systems
- ◆ Thermodynamics - Technical drawing – ICE – Workshops training
- ◆ Refrigeration and air condition – Combustion

Training courses & Experiences

- ◆ Energy Conservation
- ◆ Energy Manager in Training from AEE (12/2004)
- ◆ Boilers operation and maintenance
- ◆ Steam and Gas turbines operation
- ◆ Electric power stations - Rotary kilns for cement industries
- ◆ Thermal insulation and refractors
- ◆ Computer software - Gas and steam turbines
- ◆ CAD CAM System & Prototyping Machines (China 10/2002)
- ◆ Calibration and testing of furnaces (NIS – 25-29/9/2009)
- ◆ Management of Small and Medium Enterprises

Current Research

- ◆ Heat Transfer and flow in Unsteady Laminar and Turb. Flows
- ◆ Sudden Expansion for unsteady Turbulent flows
- ◆ performance Improving of Heat Exchangers using Nano fluids
- ◆ Improving of rotary kilns performance in cement industry
- ◆ Heat transfer applications
- ◆ Solar systems and desalination water systems

MEMBERSHIP OF PROFESSIONAL BODIES

- ◆ Member in Egyptian Engineering Syndicate.
- ◆ Member in the Board of Directors for Energy and Environmental Research Center (E2RC), TIMS.
- ◆ Member in the Board of Directors for Industrialization Studies and Technological Development Centre (INSTED), TIMS.

References:

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Published papers:

1. "Enhanced heat transfer in channels with staggered fins of different spacing", A.E. Zohir M. A. Habib A. A. Mobarak and A. M. Attya, Int. J. Heat and Fluid Flow, Vol. 14, No. 2, June 1993.
2. "An experimental investigation of heat transfer and flow in channels with Streamwise-periodic flow", A.E. Zohir M. A. Habib A. A. Mobarak and A. M. Attya, Energy Vol. 17, N. 11, pp. 1049-1058, 1992.
3. "Convective heat transfer characteristics of laminar pulsating pipe air flow", A.E. Zohir M. A. Habib A. M. Attya and A. I. Eid, Heat and Mass Transfer, Vol. 38, pp. 221-232, 2002.
4. "Heat transfer characteristics and Nusselt number correlation of turbulent pulsating pipe air flow", A.E. Zohir M. A. Habib, A. M. Attya, A. I. Eid and S.A.M. Said, Heat and Mass Transfer 40, pp. 307-318, 2004.
5. "An experimental investigation of heat transfer to pulsating pipe air flow with different amplitudes", A. E. Zohir M. A. Habib A., M. Attya A. I. Eid, Journal of Heat and Mass Transfer, Vol. 42, No.7, P.625-635, May 2006.
6. Heat Transfer Characteristics of Pulsated Flow Downstream of Abrupt Expansion through Pipes. K. M. El-Shazly, A. E. Zohir**, A. A. Abdel-Aziz and M. A. Mohimen. "Bulletin of Tabbin Institute for Metallurgical Studies, Volume 86, P.1-18, July 2005."
7. Heat Transfer Characteristics in Unsteady Turbulent Air Flow in Pipes with Different Upstream Pulsator Locations. A. E. Zohir**. "Bulletin of Tabbin Institute for Metallurgical Studies, Volume 87, P. 49-68, January 2006.
8. "Study of the Main Energetic Parameters in the Rotary Kiln". M. G, Khalifa, A. E. Zohir and M. M. Wanis. First Scientific Environmental Conference "Environmental Pollution and its Effect on the Community, Zagazig University, P.171-194, 13-14 June, 2006.
9. Comparison of Heat Transfer Characteristic in a Sudden Pipe Expansion with Upstream and Downstream Pulsating system, A. E. Zohir and A. A. Abdel Aziz. Journal of Engineering Sciences, Assiut University, Vol.34 No. 4, P.1239-1253, July 2006.
10. The Effect of Pulsation on Heat Transfer in a Heat Exchanger for Different Amplitudes. A. E. Zohir. "Bulletin of Tabbin Institute for Metallurgical Studies, Volume 89, January 2007.
11. Forced Convection Heat Transfer of Turbulent Pulsating Flow Through an Axisymmetric Sudden Expansion Pipe With Different Diameter Ratios. A. A. Abdel Aziz, A. E. Zohir and N. S. Berbish. Al-Azhar Engineering Ninth International Conference, AEIC 2007 April 12-14, 2007.
12. Mathematical Model of Cement Industry. M. A. Habib, M.T. Hassan, A. E. zohir, and M.E.H. Shalabi. "Bulletin of Tabbin Institute for Metallurgical Studies, Volume 85, P.1-12, January 2005.
13. Characterization of Individual and Mix of Portland Cement Raw Materials before Firing and after Firing at Different Temperatures. M. A. Habib, M.T. Hassan, A. E. zohir, and M.E.H. Shalabi. "Bulletin of Tabbin Institute for Metallurgical Studies, Volume 86, P.1-12, July 2005.
14. Enhancement of heat transfer through a sudden expansion pipe airflow using propeller swirl generator. A.E. Zohir & A.G.Gomaa. *Journal of Engineering Sciences*, Assiut University, Vol. 40, No. 4, July 2012.
15. Heat Transfer Characteristics in a Double-Pipe Heat Exchanger Equipped with Coiled Circular Wires. A. E. Zohir & M.A. Habib. *Journal of Engineering Sciences*, Assiut University, Vol. 40, No. 3, May 2012.
16. Heat Transfer Characteristics in a Heat Exchanger for Turbulent Pulsating Water Flow with Different Amplitudes. A.E.Zohir. *Journal of American Science*, 2012; 8(2). *Impact factor* = 0.5.
17. Turbulent heat transfer characteristics and pressure drop in swirling flow at upstream and downstream of an abrupt expansion. A.E. Zohir. *Heat Mass Transfer* (2012) 48(3):529–539. *Impact factor* = 0.673.

- 18.** The Influence of Pulsation on Heat Transfer in a Heat Exchanger for Parallel and Counter Water Flows. A.E. Zohir. *New York Science Journal*, 2011; 4(6): 61-71.
- 19.** Heat transfer characteristics in a sudden expansion pipe equipped with swirl generators. A.E. Zohir, A.A. Abdel Aziz, M.A. Habib. *International Journal of Heat and Fluid Flow*, 32 (2011) 352–361. *Impact factor* = 1.802.
- 20.** Heat transfer characteristics and friction of turbulent swirling air flow through abrupt expansion, A. Khalil*, A.E. Zohir and A.M. Farid. *American Journal of Scientific and Industrial Research, Am. J. Sci. Ind. Res.*, 2010, 1(2): 364-374. *Impact factor* = 0.36.
- 21.** Energy efficiency improvement by housekeeping measures. A. E. zohir. Thermal Issues in Emerging Technologies, *ThETA 3*, Cairo, Egypt, 19th - 22nd Dec 2010.
- 22.** Studying of Waste Heat Recovery Technology in Pusher Type Furnace using Twin-bed Reclaimer Burners. A. E. zohir & A. E. El-Waer. *IEC7*, 7th International Engineering Conference, Mansoura - Sharm El-sheikh 23-28 March 2010.
- 23.** Substitution of Natural Gas for Liquid Fuel Oil in Tubrok Electric Power Station. “Case study”, S. A. Elwahab & A. E. zohir. *ESME*, 17th Conference “Activating the Role of Industry in Development of Egypt”, 25-28 March 2009.
- 24.** Energy saving by improving boiler efficiency (Case study in sweets firm). A. E. zohir. *ESME*, 18th Conference “Establishing National Industrial Base”, 16-19 march 2011.
- 25.** Heat Transfer Characteristics in a Double-Pipe Heat Exchanger Equipped with Coiled Circular Wires. A. E. Zohir, M. A. Habib, and M. A. Nemitallah. *Experimental Heat Transfer*, 28:531–545, 2015.
- 26.** Heat transfer characteristics and pressure drop of the concentric tube equipped with coiled wires for pulsating turbulent flow. A.E. Zohir, Ali A. Abdel Aziz, M.A. Habib, *Experimental Thermal and Fluid Science* 65 (2015) 41–51.
- 27.** An experimental investigation of heat transfer in a spiral-coil tube with pulsating turbulent water flow. H. Ramezani Kharvani, F. Ilami Doshmanziari, A. E. Zohir and D. Jalali-Vahid. *Heat Mass Transfer*, Vol. 51 (12), 2015.
- 28.** Investigations of heat transfer, entropy generation and pressure build up for upward flow in a vertical channel equipped with a fin array. Medhat A. Nemitallah and Alaa E. Zohir. *Heat Mass Transfer*, Vol. 51 (12), 2015.
- 29.** Characteristics of heat transfer and flow of Al₂O₃/water nanofluid in a spiral-coil tube for turbulent pulsating flow. F. Ilami Doshmanziari, A. E. Zohir, H. Ramezani Kharvani, D. Jalali-Vahid, and M. R. Kadivar. *Heat Mass Transfer* (2016) 52:1305-1320.
- 30.** Experimental Performance Investigation of Adsorption Refrigeration System Using Activated Carbon/Ethanol Pairs, Samah. I. Hatab, Ali. A. Abdel Aziz, M. Moawed, A. E. Zohir and Nabil M. Berbish, *Engineering Research Journal-Faculty of engineering Shoubra, Banha University*, Nov. 2017
- 31.** Experimental Investigation of the Adsorption Characteristics of Activated Carbon/Ethanol Pair Using a Finned Adsorbent Generator. Samah. I. Hatab, Ali. A. Abdel Aziz, M. Moawed, A. E. Zohir and Nabil M. Berbish, *Scientific Journal of October 6 University*, Nov. 2017.
- 32.** Experimental study on the effect of adsorber with three shapes of conductive material on performance of adsorption refrigeration tube using activated carbon/ethanol pair. Ali. A. Abdel Aziz, S.I. Hatab, M. Moawed, A.E. Zohir, Nabil M. Berbish. *Applied Thermal Engineering* 131 (2018) 897–909.
- 33.** Modeling and Performance Prediction of an Adsorption Cooling System with Single Bed. Mohamed. H. Ahmed, Hamdy H. El-Ghetany, Ali A. Abdel Aziz, Alaa. E. Zohir, *International Journal of Renewable Energy Research*, Vol.8, No.4, December, 2018.
- 34.** Performance Enhancement of Double Tube Heat Exchanger Using Coiled Fins, A. Khalil, S. A. El-Agouz , A. E. Zohir , A. M. Farid, *Engineering Research Journal*, Vol. 1 – 2019.
- 35.** “Innovative employing of salt hydration with adsorption to enhance performance of desalination and heat transformation systems”. Ehab S. Ali, Askalany AA, Zohir AE., *Applied Thermal Engineering*. 2020 Oct 1; 179:115614.

- 36.** "Metal-organic frameworks in cooling and water desalination: Synthesis and application". Ramy H. Mohammed, Ahmed Rezk, Ahmed Askalany, Ehab S. Ali, A.E. Zohir, Muhammad Sultan, Mohamed Ghazy, Mohammad Ali Abdelkareem, A.G. Olabi. *Renewable and Sustainable Energy Reviews* 149 (June-2021) 111362.
- 37.** Effect of Nanofluid and Coil Wire Inserted on the Performance of the Heat Exchanger, A. Khalil, S. A. El-Agouz , A. E. Zohir , A. M. Farid. *International Communications in Heat and Mass Transfer*, 2022. Under publication.
- 38.** Novel ultrasonic dynamic vapor sorption apparatus for adsorption drying, cooling and desalination applications. Ehab S. Ali, Ramy H.Mohammed, A.E.Zohir, A.M.FaridaRamadan N.Elshaer, Hamdy H.El-Ghetany, Ahmed A.Askalany. *Energy Reports Journal*, Volume 8, November 2022, Pages 8798-8804.
- 39.** A state of the art of experimentally studied adsorption water desalination systems, A. E. Zohir, Ehab S. Ali,*, A. M. Farid, Ramadan N. Elshaer, Ramy H. Mohammed, Hamdy H. El – Ghetany, Ahmed A. Askalany. *International Journal of Energy and Environmental Engineering*. Published: 23 September 2022
- 40.** Hybrid Solar-Driven Desalination/Cooling Systems: Current Situation and Future Trend. Ahmed S. Alsaman , Ahmed A. Hassan, Ehab S. Ali, Ramy H. Mohammed, Alaa E. Zohir, Ayman M. Farid, Ayman M. Zakaria Eraqi, Hamdy H. El-Ghetany and Ahmed A. Askalany. *Energies* **2022**, 15, 8099.