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Prof. Adel Abdalla Tawfik

Personal Details:

Name : Adel Abdalla Tawfik

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Qualifications:

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| 1991 | Ph.D., Mechanical Engineering Department, Indian Institute of Technology, Kharagpur, India, 1991. |
| 1984 | M.Sc., Naval Architecture and Marine Engineering Department, Suez Canal University, Egypt, 1984. |
| 1979 | B.Sc., Naval Architecture and Marine Engineering Department, Alexandria University, Egypt, 1979. |

Carrier Summary:

- 2020- Present: On leave at Faculty of Engineering and Technology, Arab Academy for Science and Technology and Maritime Transport, Alexandria, Egypt.
- 2008- 2020 : Professor of marine engineering and ship machinery, faculty of Engineering, Port Said University, Egypt.
- 2015-2017 : Head of the Marine engineering and Naval Architecture Dept., faculty of Engineering, Port Said University, Egypt.
- 2014-1015 : Dean of the faculty of engineering, Port Said University, Egypt.
- 2009- 2014 : Vice dean for graduate studies and research affairs of the faculty of engineering, Port Said University, Egypt.
- 2008- 2009 : Manger of Quality Assurance and Accreditation center, Faculty of Engineering, Egypt.
- 2000-2009 : Assistant professor, Naval Architecture and Marine Engineering Department, Suez Canal University, Egypt.
- 1992-2000 : Lecturer of Naval Architecture and Marine Engineering Department, Suez Canal University, Egypt.
- 1984-1992 : Assistance lecturer, Naval Architecture and Marine Engineering Department, Suez Canal University, Egypt.
- 1981-1984 : Instructor, Naval Architecture and Marine Engineering Department, Suez Canal University, Egypt.

Academic Experiences:

- 1996- present: Visitor professor in Naval Architecture and Marine Engineering Department, Faculty of Engineering, Alexandria University, Egypt.
- 2006- present: Visitor professor in Faculty of Engineering and Technology, Arab Academy for Science and Technology and Maritime Transport, Egypt.

- 2010- present: Visitor professor in College of Maritime Transport, Arab Academy for Science and Technology and Maritime Transport, Egypt.
- 2011- 2017 Visitor professor in College of Fisheries Technology and Aquaculture, Arab Academy for Science and Technology and Maritime Transport, Egypt.
- 1994-1996 : Visitor professor in Steam and Gas Turbines Institute, University of Aachen, Germany.
- 1987-1991 : Research-scholar in Steam and Gas Turbines Laboratory, Indian Institute of Technology, India.

COURSES TAUGHT

I- Undergraduate level:

1. Marine Engineering
2. Marine Power Plants
3. Ship Machinery and Auxiliaries.
4. Marine measurements and instruments
5. Heat Transfer and Thermodynamics
6. Machine Drawing and Assembly
7. Engineering drawing and projections
8. Advanced Marine Engineering
9. Marine pollution and Ship Emissions
10. Fluid Mechanics and hydraulics
11. Marine Diesel Engines
12. Energy Saving and Heat Recovery
13. Environmental Impact and Renewable Energy
14. Ship outfitting
15. Ship Design and Construction
16. Ship propulsion Systems
17. Offshore engineering
18. Turbo-machines
19. Steam and gas turbines
20. Diesel engines repair and maintenance

II- Postgraduate level:

1. Marine power plants
2. Ship machinery
3. Ship auxiliary machinery
4. Advanced marine engineering
5. Environmental Impact and Renewable Energy
6. Ship propulsion systems
7. Ship machinery performance
8. Marine measurements
9. Marine environment pollution.
10. Water Desalination

RESEARCH INTERESTS:

1. Conversion of Diesel Engines into NG engines
2. Dual fuel engines
3. Ship machinery and propulsion systems
4. Application of LNG in Marine fields
5. Application of renewable energy in marine fields
6. Heat transfer and cooling systems in propulsion plants
7. Combined propulsion power plants
8. Energy conservation and Heat Recovery in Marine Power Plant
9. Water desalination on shipboard
10. Workshop, Laboratories and Measurements
11. Environmental Impacts and Renewable Energy
12. Heat transfer studies of rotating machinery

Training experiences

Providing theoretical and practical courses of different mechanical disciplines for the following:

- 1- Port Said governorate investment sectors, Egypt.
- 2- Authority of Port Said Harbor, Egypt.
- 3- Suez Canal Authority, Egypt.
- 4- Arab Academy for Science and Technology and Maritime Transport, Egypt.

- 5- Port Said container terminal, Egypt.
- 6- Port Said National Company for Iron and Steel, Egypt.
- 7- Al Taweelah power plant and MSF unit, UAE.
- 8- Gabal Ali power plant and MSF unit, UAE.
- 9- Port Said Shipyard, Suez Canal Authority, Egypt.

PREVIOUS UNIVERSITY MANAGERIAL WORK:

1. Evaluation and development of new under graduate curricula for all the departments, Faculty of Engineering, Port Said University, 2014.
2. Evaluation and development of new under graduate curricula for the Dept. of Naval Architecture and Marine Engineering, Faculty of Engineering, Port Said University, 2014.
3. Evaluation and development of new under graduate curricula for the Dept. of Naval Architecture and Marine Engineering, Faculty of Engineering, Port Said, Suez Canal University, 2003.
4. Responsible for development of new post graduates curricula, 2017.
5. Preparation and installation the new marine measurements Laboratory, 2010.
6. Preparation and installation the new marine diesel engines Laboratory, 2011.
7. Preparation the faculty proposal for accreditation from NAQAAE, 2008.
8. Preparation the Department of Naval Architecture and Marine Engineering proposal for program accreditation from NAQAAE, 2011.
9. Member of Scientific Committee for Technological Staff member's promotion, AASTMT, 2011 up to date.
10. Member of the Port Said Harbor Authority Council, 2011- 2017.
11. Chair of the faculty committee for the Preparation of faculty self study and strategic plan for QAAP project, 2008.
12. Member of the Faculty of Engineering Council, 2008- present.
13. Member of the Engineering Centre for Community Development, Faculty of Eng., 2008-present.
14. Member of post graduates Port Said University council, 1995-1998.
15. Faculty representative at the Port Said University responsible for development of new university strategic plan, 2011.

16. Chairman of the post graduates committee, Faculty of Engineering, Port Said University, 2009.
17. Member of the environmental affairs committee, Faculty of Engineering, Suez canal University, 2002-2008.
18. Member of the national committee to development the curricula of the technical marine construction institute, 2006.
19. Chairman of the national committee to proposed the students training program of the technical marine construction institute, 2009.
20. Preparation the text and training program to improvement the technical skills of the operators for Port Said investment sectors, 2007
21. Guide and examinee many PhD. and M.Sc. Theses.

Membership and Affiliations:

- Member of Indian Society for Heat and mass Transfer studies, India.
- Member of South East European Transport Research Forum (SETREF). Greece
- Member of the New York Academy of Sciences, USA.
- Member, Egyptian Institute of Marine Engineers and Shipbuilders.
- Member, Egyptian Engineers' Syndicate.
- Member of Scientific Society of Engineering, Port Said, Egypt.
- Editor in chief of Port Said Engineering Research Journal, Port Said, Egypt
- Member of the National authority for quality assurance and accreditation of education in Egypt.
- Member of the higher Council of General Authority of Port Said Ports.

Participations in Projects and Applied Researches:

- 2014-2016 : Arab Academy of science and technology, Faculty of engineering, Design and fabrication of solar powered passenger boat.
- 2011-2013 : Arab Academy of science and technology, Faculty of engineering, Design and fabrication of electric propulsion system.
- 2005-2006 : Suez Canal University Project, Faculty of Engineering, Design and fabrication of fire fighting system on shipboard"

- 2004-2005 : Design and installation of the Sanitary and sewage pumping station for the academic hospital, Suez Canal University.
- 2002- 2003 : Suez Canal University Project, Faculty of Engineering, "Wind assisted cruise for clean environments and energy conservation"

Professional Experience and Consultations:

- 1- Member of the higher Council of General Authority of Port Said Ports and Suez Canal development zone.
- 2- Project Manager for developing of Aqapa harbor, Jourdan.
- 3- Design and supervising the pontoon construction of Sindalah Island floating bridge and layout with mooring system, NEOM, Saudi Arabia.
- 4- Design the construction of Sindalah floating pontoons and platform, NEOM, Saudi Arabia.
- 5- Design and supervising the construction of Bernice floating bridge with mooring system arrangement, locate at south of Egypt.
- 6- Installation descriptions and calculations of booming arrangement for the twin-water intake protection system in Alhamra Port, Alexandria, Egypt.
- 7- Preparing specifications and supervising tests, trials and delivery of tugboats, pleasure boats, supply vessels, bulk carriers, and cargo barges
- 8- Design and supervising the construction of many floating restaurants and hotels, River Nile, Egypt.
- 9- Design and supervising the construction of many floating meeting and wedding hall, Egypt.
- 10-Design, specifications and supervising the construction of many floating passenger's boats, Egypt
- 11-Design and supervising the construction and outfitting of the offshore supporting tugboat, Misk 22, Saudi Arabia.
- 12-Design and supervising the construction of sanitary and sewage pumping station f academic hospital of Suez Canal university, 2005
- 13-Preparation of construction design and power calculation booklet and conducting lightweight checks for several ship types.

- 14-Consultant to many inland shipyard and several marine companies in Egypt
- 15-Conducting technical, environmental and economic studies of fishing vessels development in south east coast of Egypt, 2009.
- 16-Participating in the study and supervising of converting a single screw ocean going tug into a twin screw propulsion system, 2006
- 17-Design and supervising the installation of propulsion system for several floating units
- 18-Conducting Technical Investigations of many Marine accidents and casualties for legal court cases.
- 19-Technical consultant and supervising to several propulsion machinery and shafting systems installation
- 20-Preparing technical reports and economical evaluation of several ships and floating structures.
- 21-Conducting technical investigations and feasibility studies of several marine projects
- 22-External reviewer for school based education, qualified by national authority for quality assurance and accreditation of education (NAQAAE).
- 23-Peer reviewer for higher education, qualified by National authority for quality assurance and accreditation of education (NAQAAE).
- 24-Reviewer of National Quality Assurance and Accreditation Authority, NAQAAE, Egypt.

List of publications:

1. B.V.S.S.S. Prasad, A.A. Tawfik and A.K. Mohanty, Fluid flow and heat transfer measurements from rotating cylinder in crossflow, 9th International heat transfer conference, ASME, (1990).
2. B.V.S.S.S. Prasad, A.A. Tawfik and A.K. Mohanty, Heat transfer from a circular cylinder rotating about an orthogonal axis in quiescent air, Journal of Experiments in Fluids, Vol.10, pp. 267-272, (1991).
3. A.A. Tawfik, B.V.S.S.S. Prasad, and A.K. Mohanty, Local heat transfer and pressure distribution past a cylinder rotating about an orthogonal axis, 2nd world conference on experiments heat transfer, fluid mechanics and thermodynamics, Dubrovnik, Yugoslavia (1991).

4. A.A.Tawfik, B.V.S.S.S. Prasad, and A.K. Mohanty, Heat transfer from rotating airfoils in quiescent air, 11th International heat and mass transfer conference, Madras, India (1991)
5. A.A.Tawfik, B.V.S.S.S. Prasad, and A.K. Mohanty, "Heat transfer from rotating cylinders and blades", International Symposium of heat transfer in Turbo-machinery, Athens, Greece (1992).
6. B.V.S.S.S. Prasad, A.A. Tawfik and V.R.M. Rao, "Heat transfer from aerofoils in crossflow", Journal of International Communication of Heat and Mass Transfer, Vol. 19, pp. 879-890, (1992).
7. A.A. Tawfik, B.V.S.S.S. Prasad and A.K. Mohanty, "Pressure measurements around a rotating cylinder with and without crossflow", Transaction of the ASME, Journal of Fluid Engineering, Vol. 115, pp. 526-5528, (1993).
8. A.K. Mohanty and A.A. Tawfik, "Heat transfer due to a round jet impinging normal to a flat surface", International Journal of Heat and Mass Transfer, Vol. 36, pp. 1639-1647, (1993).
9. A.A.Tawfik and R.R.Abdelghany, "Computer aided design of supercavitating propellers", 6th Congress of the International Maritime Association of Mediterranean, IMAM'93, Varna, Bulgaria (1993)
10. A.A. Tawfik, "Application of wind energy in motor ships", 4th International conference on energy, development and environment, Cairo, Egypt, (1994).
11. A.K. Mohanty, A.A. Tawfik and B.V.S.S.S. Prasad, "Heat transfer from a rotating cylinder in crossflow", Journal of Experimental Thermal and Fluid Science, Vol. 10, pp. 54-61, (1995).
12. A.A.Tawfik, "Wind energy assisted motors for ship propulsion", 1st International Energy and environment symposium, Trabzon, Turkey (1996).
13. A.A.Tawfik, " Heat transfer and pressure distributions of an impinging jet on a flat surface", 2nd European Thermal Sciences and 14th UIT national heat transfer conference, Rome, Italy (1996).
14. A.A. Tawfik, " Heat transfer and pressure distributions of an impinging jet on a flat surface", Research Journal of Heat and Mass Transfer, Vol. 32, pp. 49-54, (1996).
15. A.A.Tawfik and H.ElKilani, "Controlled pumping system for oil spill minimization", IMAM, VOL3, Istanbul, Turkey (1997).

16. A.A.Tawfik, "Wind assisted cruisers for clean environment and energy conservation", 2nd International conference on marine industry, MARIND, Vol 1, Varna, Bulgaria (1998).
17. A.A.Tawfek, " Heat transfer due to a round jet impinging normal to acicular cylinder" Research Journal of Heat and Mass Transfer, Vol. 35, pp. 327-333, (1999).
18. A.A.Tawfek, " Heat transfer studies of the oblique impingement of round jets upon a curved surface", Research Journal of Heat and Mass Transfer, Vol. 38, (2002).
19. A A. Tawfik, " Experimental study on the Aerodynamic performance of a vertical axis wind turbine (VAWT) rotor", Port Said Engineering Research Journal, Faculty of Engineering, Suez Canal University, Vol. 8, (2003).
20. M.A. Kotb, A.A. Tawfik, and A.A. Banawan, "Proposal for short sea commuter transportation system for Alexandria North Coast", Alexandria Engineering Journal AEJ, Vol. 43, No.2, March 2004.
21. Also, Dokuz Eylil University, The International Association of Maritime Economists Annual Conference, June 30- July 2, 2004, IAME Izmir, Turkey, Conference Proceeding Vol. 2, 2004.
22. Abd-Elmotalip, M.A. Shehata Okale, and A.A. Tawfik, "Experimental study on the aerodynamic performance of a vertical axis wind turbine (VAWT) rotor", Port Said Engineering Research Journal PSERJ, Vol. 8, No.1, March 2004.
23. A. A. Tawfik, "Environmental aspects of natural gas application in inland water transportation", Alexandria Engineering Journal AEJ, Vol. 44, No.5, September 2005.
24. A. A. Tawfik, M.A. Kotb and M.F.M. Ali, "Natural gas use for on propulsion machinery of inland water cargo barges", Port Said Engineering Research Journal PSERJ, Vol. 11, No.1, March 2007.
25. A. A. Tawfik, "Machinery Conversion of Suez Canal Ferries to Dual Fuel Operation", Port Said Engineering Research Journal PSERJ, Vol. 11, No.2, September 2007.
26. A A. Tawfik, "Heat Transfer from Rotating Finned Heat Exchangers with Different Orientation Angles", Port Said Engineering Research Journal PSERJ, Vol. 12, No. 2, September 2008.
27. A. A. Tawfik, "An Experimental Study of Heat Transfer and Pressure Distributions of a Round Air Jet Impinging a Cylindrical Surface", Port Said Engineering Research Journal PSERJ, Vol. 12, No. 2, September 2008.

28. A. A. Tawfik, "Alternative fuel system for green and economical Suez Canal ferries", Scientific conference of the development of post graduate programs in the higher education sectors, Menofia University, 25-26 February 2009.
29. A A. Tawfik, "Heat Transfer from Rotating Finned Heat Exchangers" Research Journal of Heat and Mass Transfer, Germany, Vol. 46, (2010).
30. Adel. A. Tawfik, "Study of Heat Transfer and Pressure Distributions of a Round Jet Impinging a Curved Surface", 4th International conference on fluid Mechanics and Fluid Power, Madras, India, December-2010.
31. Adel A. Tawfik and Mohammed A Kotb, "Wind Power Assisted Ship Propulsion in Red Sea, GCREEDER., Amman-Jordan, April 2011.
32. Adel A. Tawfik, "Heat Transfer in Turbo-machinery" invited as a key note speaker on 11th Asian International conference on Fluid Machinery and 3rd Fluid Power Technology Exhibition, IIT, Madras, India 2011.
33. Adel A. Tawfik, "Natural gas fuelled Suez Canal ferries to protect the environment and attaining energy efficiency in Egypt", International Marine and Offshore Engineering Conference (IMOC 2014), Kingdom of Saudi Arabia.
34. E. H. Hegazy, M. A. Mosaad, A.A. Tawfik, M. A. Hassan, M. Abbas, Technical and Environmental Improvements of LNG Carrier's Propulsion Machinery by Using Jatropa Bio - diesel fuel, Port Said Engineering Research Journal PSERJ, Vol. 18, No. 2, March 2014.
35. Khaled Senary, Elsayed Hegazy, Adel A. Tawfik and Amr Ali Hasan, Evolution and Trends in LNGC Propulsion Systems, Port Said Engineering Research Journal PSERJ, Vol. 20, No. 1, March 2016.
36. Khaled Senary, Elsayed Hegazy, Adel A. Tawfik and Amr Ali Hasan, Development of a Waste Heat Recovery System Onboard LNG Carrier to Meet IMO Regulations, AEJ, Elsevier 2016.
37. Norhan I. Ghonem, ElSayed Hegazy, Mohamed A. Kotb and Adel A. Tawfik, Stability Aspects of Bulk Carriers, Port Said Engineering Research Journal PSERJ, Vol. 20, No. 2, Sep 2016.
38. Osama Ellian, El Sayed Hegazy and Adel A. Tawfik, Ship Emissions Reduction Using Alternative Fuels and Abatement Technology, International Journal of Novel Research in Civil Structural and Earth Sciences, Vol. 3, Issue 3, pp: (15-24), Month: September - December 2016.

39. Osama Ellian, El Sayed Hegazy and Adel A. Tawfik, Statistical Analysis and Proposed Formulae for Preliminary Design of Inland Passenger-Car LNG Fuelled Ferries, International Journal of Novel Research in Civil Structural and Earth Sciences, Vol. 3, Issue 3, pp: (15-24), Month: September - December 2016.
40. Adel A. Tawfik, M. Mansour and A. EL-Taybany, ASSESSMENT OF THE EMISSIONS FROM SEAGOING SHIPS IN SUEZ CANAL, Port Said Engineering Research Journal PSERJ, Vol. 21, No. 2, Sep 2017.
41. M. El-Maadawy, M.M. Moustafa, H. S. El-Kilani and Adel A. Tawfik, Assessment of Ships Docking Operation Using FEM, Case Study: Port Said Floating Dry Dock, Port Said Engineering Research Journal PSERJ, Vol. 21, No. 2, Sep 2017.
42. A. El-Taybany, M.M. Moustafa, M. Mansour and Adel A. Tawfik, Quantification of the Exhaust Emissions from Seagoing Ships in Suez Canal Waterway, AEJ, Elsevier 2018.
43. Reduction of Fuel Consumption on Shipboard by Air Lubrication, Adel A. Tawfik, M.M. Moustafa and W. Yehia, Port Said Engineering Research Journal PSERJ, Vol. 22, No. 2, Sep 2018.
44. Mohamed El-Sawy, Ahmed S. Shehata, A.H Abdelbaky Elbatran, Adel A. Tawfik, Numerical simulation of flow in hydrokinetic turbine channel to improve its efficiency by using first and second-law efficiency analysis, Ocean Engineering 244 (2022) 110400.
45. Bed air, A.O., Ahmed S. Shahata, Mostafa S. Hamad, Adel Tawfik, A novel forced air/water injection system for efficient cooling of solar panels. AIP Conference Proceedings, 2022. 2437(1): p. 020109.
46. Bed air A.O., Ahmed S. Shahata, Mostafa S. Hamad and Adel A. Tawfik, Energy Performance enhancement of PV system through proposed back cooling techniques and natural air draught: An experimental study, Int'l Conference on Technologies and Materials for Renewable Energy, Tmrees23 Paper 6616, 2022.
47. Ahmed Osama Mahmoud Bed air, Ahmed S. Shamata, Mostafa S. Hamad and Adel A. Tawfik, Energy performance enhancement of PV system through proposed back cooling techniques and natural air draft: an experimental study, International Journal of Green Energy, Received 07 Nov 2022, Accepted 28 Jul 2023, Published online: 14 Aug 2023.
48. Loay M. Aboud, M. S. Almanzalawy, A. H. Abdelbaky Elbatran, Adel A. Tawfik & A. E. Elwardany, On the influence of low octane gasoline and biodiesel on diesel engine operating characteristics, Petroleum

Science and Technology, DOI: 10.1080/10916466.2023.2271529, (23 Oct 2023).

49. Merna Makram, Ameen M. Bassam, Adel A. Tawfik and Waleed Yehia, Assessment of Onshore Renewable Energy Power Supply for Ship's Emissions Reduction in Port Said West Port, Journal of marine science and application, 23 2024.
50. Loay M. Aboud, A.H Abdelbaky Elbatran, Adel A. Tawfik and A. E. Elwardany, Experimental assessment to reduce emission of compression ignition engine via diesel/biodiesel/water blends, The international Maritime and Logistics Conference, Marlog 13, 2024.