



Name: Tarek Abdel-Malak Mekhail

Current Title (including department and university): Professor of Mechanical Power Engineering , Faculty of Engineering, Aswan University

Address: 137 Elshaheed Ahmad Hamdy St. Faisal, Giza, Egypt

Phone: 01226930811

Email: tmalak@aswu.edu.eg

FIELDS OF SPECIALIZATION

Turbomachines design and general fluid mechanics Engineering problems using CFD codes as well as side-channel Machines and Jet Pumps. Solar thermal Engineering, Wind Energy and Nanofluid problems.

DEGREES

- 1- Bachelor degree in Mechanical Power Engineering in July 1991, Faculty of Engineering, Menoufia University – Egypt, with honor degree.
- 2- Master degree in Mechanical Power Engineering, Faculty of Engineering - Cairo University - Egypt October 1996.
- 3- Ph.D. degree in Mechanical Power Engineering in July 2002, Shanghai JiaoTong University- School of Power and Energy – China.

ACADEMIC AND INDUSTRIAL POSITIONS

Employment History and Teaching Experience

No	Position	Institution	From	To
1	Research Engineer	Joined the Egyptian Army after graduation (As an Engineering Officer)	1991	1993
2	Teaching Assistant	Mechanical Power Engineering Department, Aswan University**. (previously: Aswan High Institute of Energy, Ministry of Higher Education).	1993	1998
3	Assistant Lecturer	Mechanical Power Engineering Department, Aswan University (previously: Aswan High Institute of Energy, Ministry of Higher Education)	1998	2003
4	Lecturer	Lecturer at the Mechanical Power Engineering Department, Aswan University (previously: High Institute of Energy, South Valley University, Aswan).	2003	2009
5	Associate Professor	Mechanical Power Station Engineering Department, Faculty of Energy Engineering Aswan University, Aswan.	2009	2014
6	Full Professor	Mechanical Power Engineering Department, Faculty of Energy Engineering Aswan University, Aswan.	2014	Till now

Managerial and Leadership Positions

No	Position	Institution	From	To
1	Vice Dean for Academic affairs and Head of the Mechanical Power Station Engineering Department	Faculty of Energy Engineering, Aswan University (previously: South Valley University, Aswan)	2009	2012
2	Head of Mechanical Technology Department (Mandated).	Al-Ameeria Integrated Technical Education Cluster* (3+2+2 programs), Education Development Fund, Cabinet of Ministers. Egypt.	2012	2014
3	Director (Dean) (Mandated).	Al-Ameeria Integrated Technical Education Cluster (3+2+2 programs), Education Development Fund, Cabinet of Ministers. Egypt.	2014	2020
4	Vice Dean for Academic affairs. (Mandated).	New Cairo Technological University**- Faculty of Industry and Energy - Egypt.	2020	2021
5	Dean of Faculty of Industry and Energy (Mandated).	New Cairo Technological University**- Faculty of Industry and Energy - Egypt.	2021	Till now

CONSULTANT

- Consultant Engineer at "Al-bardi paper mill company" from 2005- 2006 (part time).

- Consultant Engineer at “Carmen Tissues Company” from (2008 – 2012) (Part time).
- GIZ expert 2022-2023

AWARDS

- 1- Honor for the Bachelor Degree, Monoufia University, May 1991
- 2- Full scholarship, Shanghai JiaoTong University for Ph.D. from 1997 to 2002
- 3- Post-doctoral fellowship, Korea Advanced Institute of Science and Technology (KAIST)* , Dept. of Aerospace Engineering form 4th Aug. 2003, to 7th Sept. 2005.
- 4- Aswan University award for the best international publication in 2015.
- 5- Aswan University award for the best post-graduate Supervision in 2015.
- 6- Prize for the Ameeria Integrated Technical Educational Cluster receiving the award of one of the best ten centers for technological education during my administration in 2015 and the honor was given at the headquarters of the African Union in Addis Ababa in October 2015.
- 7- Visiting professor at Kumamoto University January 2017.
- 8- Aswan University Publication Award 2019

PROFESSIONAL RECOGNITION

- International Standards Verifier from 2018 till now for PEARSON BTEC vocational Engineering qualification (**AA 574228**).

Renewable Energy International Research Joint Projects

- 1- STDF- GERF joint project – Principle Investigator (PI) "Solar Chimney Power Generation - Case of Aswan, Egypt” 2013-2017. Partner with Ruhr university Bochum, and The University of Wuppertal - Germany
- 2- Egypt- UK - Institutional Link joint project – Principle Investigator (PI) "Engineering Sustainable Solar Energy and Thermocline Alternatives (ESSEnTiAl)" 2018 till 2022 with The University of Manchester - UK

PATENTS, PUBLICATIONS

Publications

(1) Books

1- **Vakuumpumpen** (chapter of new design of Regenerative Pumps)

Publisher:Verlag und Bildarchiv

W.H.Faragallah

place:Sulzbach/TS-Germany 2008

ISBN: 3-929682-28-1

2- Jet Pumps and Ejectors, Theory, performance and Design

Meakhail T. , and Mikhail, S

D-65843 Sulzbach/Germany 2010

ISBN: 978-3-929682-48-9

(2) Journal Papers

[1] Meakhail T.and Chen H.P “ Numerical and Experimental Survey of Centrifugal Machine Components” Journal of SJTU Vol. E-6, 2001, pp 107-112.

[2] Meakhail T., Seung O Park, “ A study of Impeller-Diffuser-Volute Interaction in a Centrifugal Fan“ ASME Journal of Turbomachinery, Vol.127, No. 1, 2005, pp 84-90.

[3] Meakhail T., Seung O Park “An Improved Theory for Regenerative Pump Performance” Proc. IMechE ,Part A: Journal of Power and Energy, Vol. 213, pp.222–2005.

[4] Meakhail T. “ Numerical Study of Unsteady Flow Characteristics in Regenerative Pump” Journal of Engineering Sciences, Faculty of Engineering, Assiut University, Vol 35 , No. 4, pp 933-943, July,2007

[5] El Gazzar, M., Meakhail T., and Mikhail, S.,“Experimental Study of The Effect of Drag Reduction Agents on The Performance of Jet Pump“ Proc. IMechE ,Part A: J. PowerandEnergy,Vol.220,PP.379–386,June,2006.

[6] El Gazzar,M .,Meakhail T.,and Mikhail,S ., "A Numerical Study of The Flow Inside Annular Jet pump". AIAA, " Journal of Thermophysics and Heat Transfer "Vol. 20, No. 4, pp.930-932 October–December 2006.

[7] El Gazzar, M., Meakhail T. , and Mikhail, S ., " Numerical and Experimental Study of the Influence of Drag Reduction Agent (C.M.C.) on the Central Jet Pump Performance"., IMechE ,Part A: J. Power and Energy. Vol.221,PP.1067–1073,2007.

[8] Meakhail T., Yaser Z., Elsallak M, Abdelhady S." Experimental study of the effect of some geometric variables and number of nozzles on the performance of a subsonic air-air ejector" IMechE ,Part A: J. Power and Energy. 2008, Vol. 222, PP. 809-818

[9] Meakhail T. " Experimental and numerical study of the effect of mixing chamber length and area ratio on the performance of a subsonic air-air ejector" Journal of Engineering Sciences, Faculty of Engineering, Assiut University, Vol 37 , No. 1, pp 85-99, Jan,2009.

[10] Abdel-Mohimen M., T. A. Meakhail, S. S. Ayad, and K. M. El-Shazly "An Investigation of the Effect of Anti-Vortex Film Cooling On a Flat Plate" Engineering and Scintific Research Journal (ESRJ), Faculty of Engineering - Benha University, ISSN 1687 - 1340, Volume No.(12) No.(1), pp 34 - 51, 2010.

- [11] Meakhail T., Aissa W., Hassanein S., and Hamdy O., “ CFD Simulation of Dilute Gas-Solid Flow in 90° Square Bend” Scientific Research, Energy and Power Engineering, 2011,3,246-252. DOI: 10.4236/ojfd.2013.34040
- [12] Meakhail T. and Ibrahim Teaima “Experimental and Numerical Studies of the Effect of Area Ratio and Driving Pressure on the Performance of Water and Slurry Jet Pumps” IMechE ,Part C: Journal of Mechanical Engineering Science. 2012, Vol. 226 No.(9), pp 2250 - 2266.
- [13] Meakhail T." Analysis of Airflow in Multi-room Building for Different Ventilation Patterns" *International Journals of Engineering & Sciences*,2014 Vol:13 No:04 ,pp 1-11.
- [14] Mekhail, T.A.-M., Dahab, O.M., Sadik, M.F., El-Gendi, M.M. and Abdel-Mohsen, H.S. (2015) Theoretical, Experimental and Numerical Investigations of the Effect of Inlet Blade Angle on the Performance of Regenerative Blowers. *Open Journal of Fluid Dynamics*, 5, 224-237.<http://dx.doi.org/10.4236/ojfd.2015.53025>
- [15] Mekhail, T.A.-M., Dahab, O.M., Sadik, M.F., El-Gendi, M.M. and Abdel-Mohsen, H.S. (2015) Theoretical, Experimental and Numerical Investigations of the Effect of Blades Number on the Performance of Regenerative Blowers. *INTERNATIONAL JOURNAL OF CONTROL, AUTOMATION AND SYSTEMS*, Vol. 4, No.4, 25-36.
- [16] Mohamed Salem 1, 2, Magdy A. Bassily, Tarek A. Meakhail, Shuichi TORII " Experimental Investigation on Heat Transfer and Pressure Drop Characteristics of Graphene Oxide/Water Nanofluid in a Circular Tube" *IPASJ International Journal of Mechanical Engineering (IJME)* , Volume 4, Issue 3, March 2016.
- [17] Mohamed Salem 1, 2, Magdy A. Bassily, Tarek A. Meakhail, Shuichi TORII "Turbulent Convective Heat Transfer of Graphene Oxide Nanofluid Through Horizontal Tube international" *Journal of Engineering Sciences & Research Technology* 5(2): February, 2016, PP 898- 906.
- [18] Mohamed Salem, Tarek A. Meakhail, Magdy A. Bassily, and Shuichi Torii “Heat Transfer Performance of a Multi-heat Pipe Using Graphene Oxide/Water Nanofluid” *Journal of Energy and Power Engineering* 11 (2017) 95-102
- [19] Osama Hamdy, Magdy Bassily, Hesham M. El-Batsh, Tarek A Meakhail 2017 "Numerical study of the effect of changing the cyclone cone length on the gas flow field" *Applied Mathematical Modelling*, Vol 46, 81-97.
- [20] Tarek Mekhail, Ahmed Rekaby, Mohamed Fathy, Magdy Bassily, and Reinhard Harte 2016 "Experimental and Theoretical Performance of Mini Solar Chimney Power Plant" *Journal of Clean Energy Technologies* Vol.5, No.4, 294-298.
- [21] Magdy Bassily Hanna, Tarek Abdel-Malak Mekhail, Omar Mohamed Dahab, Mohamed Fathy Cidek Esmail, Ahmed Rekaby Abdel-Rahman "Experimental and Numerical Investigation of the Solar Chimney Power Plant’s Turbine" *Open Journal of Fluid Dynamics*, 2016, 6, 332-342
- [22] Magdy Bassily Hanna, Tarek Abdel-Malak Mekhail, Omar Mohamed Dahab, Mohamed Fathy Cidek Esmail, Ahmed Rekaby Abdel-Rahman "Performance Investigation of the Solar Chimney Power Plants Heater Case Study in Aswan, Egypt" *Journal of Power and Energy Engineering*, 2016, 4, 39-60.
- [23] Reinhard Harte , Markus Tschersich, Rüdiger Höffer, Tarek Mekhail "Design and Construction of a Prototype Solar Updraft Chimney in Aswan/Egypt" *Acta Polytechnica* 57(3):167–181, 2017.
- [24] Fathy Cidek Esmail, M. & Mekhail, T. Investigations of the instantaneous performance of a solar chimney power plant installed in Aswan using IoT. *IET Renew. Power Gener.* 13, 2261-2266 (2019).
- [25] Mina G. Mourad, Ibrahim Shahin, Samir S. Ayad, Osama E. Abdellatif, Tarek A. Mekhail “ Effect of winglet geometry on horizontal axis wind turbine performance” *Engineering Reports*. Vol. 2 Issue 1: 1-19, 2020.

- [26] N Abed, I Afgan, A Cioncolini, H Iacovides, A Nasser, T Mekhail “Thermal performance evaluation of various nanofluids with non-uniform heating for parabolic trough collectors” *Case Studies in Thermal Engineering*, Volume 22, December 2020,
- [27] Mohamed Fathy, W.M.A-Elmagid , Tarek Mekhail, I.M.Al-Helal and M.R.Shady “ Numerical comparative study of axial flow turbines for solar chimney power plant” *Case Studies in Thermal Engineering*, Volume 26,1-9, August 2021
- [28] Hassan Salem, Ehab Mina, Raouf Abdelmessih and Tarek Mekhail “Numerical Investigation for Performance Enhancement of Photovoltaic Cell by Nanofluid Cooling” *ASME, Journal of Solar Energy Engineering*, 021012-1:11 Vol 144 April 2022.
- [29] Sherif
- [30] M fathy

(3) Conference Papers

- [1] Meakhail T.,Chen H.P., and Du Z.H. “Numerical Study of The 3-D Flow in Krain’s Impeller” *Proceedings of the International Conference on Applied Computational Fluid Dynamics* Oct.17-20,2000 Beijing – China.pp442-449.
- [2] Meakhail T.,Chen H.P., and Du Z.H. “Numerical Transonic Flow Field Prediction For Samsung Splitter Impeller” *Proceedings of the International Conference on Applied Computational Fluid Dynamics* Oct.17-20,2000 Beijing – China.pp360-366.
- [3] Zhang Li., Meakhail T. and Chen H.P. “ Numerical Analysis of a Centrifugal Impeller at Off-Design Conditions” *Proceedings of the International Conference on Applied Computational Fluid Dynamics* Oct.17-20,2000 Beijing – China.pp 513-519.
- [4] Meakhail T. Du Z.H., Chen H.P and Jansen W. “The Use of the 3-D Viscous Codes in the Analysis of High Speed High Pressure Ratio Centrifugal Impellers” *Proceedings of The ASME Fluid Engineering Division* Nov.5-10, 2000 Florida-USA pp 693-700.
- [5] Meakhail T., Zhang Li. and Chen H.P “Unsteady Rotor-Stator Interaction in Centrifugal Fan with it Vaned and Vaneless Diffuser” *Proceeding of CSPE-JSME-ASME International Conference on Power Engineering* Oct. 8-11,2001, Xi’an-China pp 996-1004.
- [6] Zhang Li., Meakhail T., and Chen H.P “An Experimental Investigation of the Unsteady Flow in the Vaned Diffuser of a Centrifugal Fan via PIV” *Proceeding of CSPE-JSME-ASME International Conference on Power Engineering* Oct. 8-11,2001, Xi’an-China pp 950-958.
- [7] Meakhail T., Zhang Li, Du Z.H., Chen H.P and Jansen W. “The Application of PIV in the Study of Impeller Diffuser Interaction in Centrifugal Fan. Part I –Impeller-Vaneless Diffuser Interaction” *Proceedings of The ASME Fluid Engineering Division-IMECE2001/FED-24952* Nov.11-16, 2001 New York-USA .
- [8] Meakhail T., Zhang Li, Du Z.H., Chen H.P and Jansen W. “ The Application of PIV in the Study of Impeller Diffuser Interaction in Centrifugal Fan. Part II –Impeller-Vaned Diffuser Interaction ” *Proceedings of The ASME Fluid Engineering Division-IMECE2001/FED-24953* Nov.11-16, 2001 New York-USA
- [9] Meakhail T., Du Z.H., Chen H.P and Jansen W. “Numerical and Experimental study of Impeller-Diffuser Interaction” *The ASME-IMECE Fluid Engineering Division* Nov.17-22, 2002 New Orleans-USA.

- [10] Meakhail T., Seung O Park “ A Study of Circulating Flow in Regenerative Pump” Proceedings of the KSAS 1st International Session November 14-15, 2003, Gyeongju, Korea, pp. 19-26.
- [11] Meakhail T., Seung O Park “ A Study of Impeller-Diffuser-Volute Interaction in a Centrifugal Fan“ GT-2004-53068 Proceedings of ASME TURBO-EXPO June 14-17, 2004, Vienna, Austria.
- [12] Meakhail T., Seung O Park “An Improved Theory for Regenerative Pump Performance.” The 3rd International Symposium on Fluid Machinery and Fluid Engineering, December 1-3, 2004, Beijing, China.
- [13] Meakhail T., Seung O Park” Unsteady Simulation of Regenerative Pump” The 6th KSME-JSME Thermal and Fluids Engineering Conference, March 20-23, 2005, Jeju, Korea.
- [14] Meakhail T., S. Sobhi., Mekhail S." Effect of Blade Twist on the Flow Characteristics of Regenerative Pump Using CFD" The 1st International conference of Energy Engineering, ICEE-1 December 29-31, 2008, Aswan Egypt.
- [15] El-Moattar, Abdelhany M., Meakhail T. Abou Ellail M and Mikhail S. ” Experimental and Numerical Study of Turbulent Flow Inside an Annular Curved Wall Diffuser” ICFD10-EG-3603, Proceeding of the 10th ICFD International Congress of Fluid Dynamics, December 16-19,2010, Stella Di Mare Sea Club Hotel, Ain Soukhna, Read Sea, Egypt.
- [16] Hussein M., Meakhail T. , Ayad S., and Elshazly K.,” An Investigation of the Effect of Anti-Vortex Film Cooling on a Flat Plate” ICFD10-EG-3004, Proceeding of the 10th ICFD International Congress of Fluid Dynamics, December 16-19,2010, Stella Di Mare Sea Club Hotel, Ain Soukhna, Read Sea, Egypt.
- [17] Essam Hares, Tarek Mekhail, Walid Abdelfadeel and Mohamed Shaaban “Effect of manual tracking in the distillation of a single basin solar still” The 4th International Conference on Energy Engineering (ICEE-2015), 28-30 December, 2015, Aswan, Egypt.
- [18] Tarek Mekhail1, Ahmed Rekaby, Mohamed Fathy, Magdy Bassily, and Reinhard Harte "Experimental and Theoretical Investigations of Mini Solar Chimney Power Plant" June 29 to July 2, 2016 Constantana- Romania (ICREB-2016).
- [19] Tarek Mekhail, Walid Elmagid, Mohamed Fathy, Magdy Bassily, and Reinhard Harte "Theoretical Investigation of Solar Chimney Power Plant Installed in Aswan City" International Symposium on Industrial Chimneys and Cooling Towers (ICCT2016)- Rotterdam, the Netherlands - 5-8 October 2016. 299-308.
- [20] Tarek Mekhail, Mohamed Fathy, Reinhard Harte and Ruediger Hoeffler " Experimental Investigations of the Instantaneous Performance of Solar Chimney Power Plant Installed in Aswan. The 4th International Conference on Energy Engineering (ICEE-2017), 26-28 December, 2017, Aswan Egypt
- [21] Tarek Mekhail, Mohamed Fathy, Reinhard Harte and Ruediger Hoeffler " New Implementation of the Use of Cross Wind in Solar Chimney Power Plant" The 4th International Conference on Energy Engineering (ICEE-2017), 26-28 December, 2017, Aswan, Egypt.
- [22] Osama Hamdy, Magdy A. Bassily, Hesham M. El-Batsh and Tarek Mekhail Numerical and experimental study of the performance for a cyclone separator without barrel part" The 4th International Conference on Energy Engineering (ICEE-2017), 26-28 December, 2017, Aswan, Egypt.

[23] Essam M. Abdel-Rahman, Mohamed Shaban, Waleed Abdel-Fadeel and T. Meakhail: “Effect of manual tracking in the distillation of a single basin solar still” The 3rd International Conference on Energy Engineering (ICEE-2015)

[24] Essam M. Abdel-Rahman, Mohamed Shaban, Waleed Abdel-Fadeel and T. Meakhail: “Effect of insulating materials in the distillation of a single basin solar still” The fifth international conference coordinators of AUSDE (March 2015) entitled: "Water, Energy, Climate and food nexus in the Arab countries"

[25] Nabeel Abed, Imran Afgan, Adel Nasser, Hector Iacovides, Andera Cioncolini and Tarek Mekhail " Numerical Investigations of parabolic trough collectors using different nanofluids" The 5th International Conference on Energy Engineering (ICEE-2019), 24-26 December, 2019, Aswan, Egypt.

[26] Tarek Mekhail, Mohamed Fathy, Michael Nasif and Imran Afgan “Parametric Study of the Flow in the Horizontal Absorber Tube of the Parabolic Trough Collector” The 5th International Conference on Energy Engineering (ICEE-2019), 24-26 December, 2019, Aswan, Egypt.

[27] Ezz H, Tarek Mekhail, Waleed Ahmed, Ibrahim Kamal “Numerical Study of the Flow in Rotor-Stator of Francis Turbine” The 5th International Conference on Energy Engineering (ICEE-2019), 24-26 December, 2019, Aswan, Egypt.

Professional References

No.	Name	Position	Contact Details
1	Prof. Khalil Abdelrazek	Assistant Dean for graduate studies - Sharjah University - UAE	00971 54 445 2862 kabelmawgoud@sharjah.ac.ae
2	Prof. Adel Zain	Dean of Faculty of Energy Engineering, Aswan University. Egypt	0020 1275179280 azeinm2001@hotmail.com
3	Prof Gamal Tag	Dean of Faculty of Engineering, South Valley University. Egypt	0020 1224606651 gtag2000@eng.Svu.edu.eg