

Prof. Dr. Hesham Mohamed El-Batsh, M.Sc., Ph.D. Professor

Summary



Prof. Dr. Hesham El-Batsh started his carrier as an engineer in the industry. Then he moved to the university to start his academic carrier. He scientific studies had focused on the energy systems and specifically in the single and two phase flow of different applications. These applications covered the flow in turbomachinery and the associated losses. In addition, he studied the single and the two-phase flow in oil refinery pipelines and calculated with his colleagues the corrosion in petroleum pipelines. Furthermore, he performed experimental and numerical studies for the flow in cyclone separators.

Prof. El-Batsh also studied in renewable energy in two fields covering wind turbines and alternative fuels in energy systems. Prof. El-Batsh is supervising different Ph.D. and M.Sc. theses in Benha University, Assuit University and Minia University. He had also supervised many undergraduate projects in the home university and other universities. He had worked in different funded projects from the European Union and others. He has more than thirty years of teaching experience for the undergraduate and graduate students in different Egyptian and Arabian Universities. Prof. El-Batsh has very long administrative experience as Department head, Faculty Vice Dean, Acting Faculty Dean or as Acting University Vice President.

Education:

October 2001, Ph.D., Institute of Energy Systems,
Vienna University of Technology, Vienna, Austria
March 1994, M.Sc., Faculty of Engineering,
Alexandria University, Alexandria, Egypt
May 1988, B. Sc., Faculty of Engineering,
Menofia University

Major Research Fields

- Increasing the extracted power from wind using modern wind turbines
 - Combustion characteristics of alternative fuels with the addition of nano- particles
 - Investigation of the secondary flow and tip leakage flow through turbine cascades
 - Heat transfer and film cooling of gas turbine blades
 - Naphtha/water multiphase flow and corrosion of petroleum pipelines.
 - Investigation of panel cooling systems and under floor air conditioning systems
 - Single and two-phase flow in cyclone separators
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Professional Experience

Oct. 2020 – Now	Dean of the Higher Institute of Engineering and Technology at Mahala Al-Kobra, Egypt
Oct. 2018 – Feb. 2020	Supervisor for the Community Sector at Benha University
Feb. 2018-Aug. 2018	Acting Dean, Benha Faculty of Engineering, Benha University
Mar. 2013 – Mar. 2018	Vice Dean for Graduate Studies and Scientific Research, Benha Faculty of Engineering, Benha University, Egypt
Mar. 2012 – Mar. 2013	Head, Mechanical Engineering Department, Benha Faculty of Engineering, Benha University, Egypt.
Dec. 2012,	Professor of Energy Systems, Mechanical Engineering Department, Benha Faculty of Engineering, Benha University, Egypt.
2007-2012,	Associate Professor, Mechanical Engineering Department, Benha Faculty of Engineering, Benha University, Egypt.
1997-2001	Doctorate fellowship, Institute of Thermal Turbomachines and Power Plants, Vienna University of Technology, Vienna, Austria
1994-1997	Teaching Assistant, Benha High Institute of Technology, Benha, Egypt.
1993-1994	Demonstrator, Benha High Institute of Technology, Benha, Egypt
1989-1993	Commissioning and start up engineer, Damanhour Thermal Power Plant (1x300 MW), Egyptian Electricity Authority, Egypt

Selected Publications

El-Zoheiry, RM, EL-Seesy, AI, Attia, AMA, He, Z., El-Batsh, H., Combustion and emission characteristics of Jojoba biodiesel-jet A1 mixtures applying a lean premixed pre-vaporized combustion techniques: An experimental investigation, Renewable Energy, Volume 162, December 2020, Pages 2227-2245.

<https://www.sciencedirect.com/science/article/abs/pii/S0960148120315974>

Mohamed EL-Sheikh ; Hesham El-Batsh ; Attia Ali M.A. ; El-Sayed Zanoun, Passive Flow Separation Control in Linear Compressor Cascade, October 2019, Novel Intelligent and Leading Emerging Sciences Conference (NILES)

<https://ieeexplore.ieee.org/abstract/document/8909306>

Belal Y. Belal, Ali M.A. Attia, . H. M. El-Batsh, H.A. Moneib, Effect of waste cooking oil methyl ester jet A-1 fuel blends on emission and combustion characteristics of a swirl stabilized lean pre-vaporized premixed flame, Fuel 267, 117203, 2020.

<https://www.sciencedirect.com/science/article/abs/pii/S0016236120301988>

Barsim, M., Bassily, M., El-Batsh, H., Rihan, Y. H., Sherif, M.M., Performance of Impulse ventilation system in an underground car park fire: case study, Journal of Building Engineering, 29, 2020. 101161.

<https://www.sciencedirect.com/science/article/abs/pii/S2352710219315864>

El-Shahat, S., El-Batsh, H., Attia, A., Guojun, L., Lee, F, Experimental and numerical investigations of pressure loss and 3-D flow separations in a linear compressor cascades, 10686, International Mechanical Engineering Congress & Exposition, November 11 – 14, 2019, Salt Lake City, Utah

<https://asmedigitalcollection.asme.org/IMECE/proceedings-abstract/IMECE2019/59438/V006T06A036/1073199>

El-Shahat, S., El-Batsh, H., Attia, A., Guojun, L., Lee, F, Investigations of three-dimensional flow field development in an axial compressor cascade, 11047, International Mechanical Engineering Congress & Exposition, November 11 – 14, 2019, Salt Lake City, Utah

<https://asmedigitalcollection.asme.org/IMECE/proceedings-abstract/IMECE2019/59360/V001T03A002/1072766>

Eltayesh, A., Bassily Hanna, M. Castellani, F., Huzayyin, A.S. , El-Batsh, H., Burlando, M., and Becchetti, M., Effect of Wind Tunnel Blockage on the Performance of a Horizontal Axis Wind Turbine with Different Blade Number, *Energies* 2019, 12(10).

<https://www.mdpi.com/1996-1073/12/10/1988>

Barsim, M., Bassily, M., El-Batsh, H., Rihan, Y. H., Sherif, M.M., Froude scaling modeling in an Atrium Fire equipped with natural and transient forced ventilation, *International Journal of Ventilation*, 2019

<https://www.tandfonline.com/doi/abs/10.1080/14733315.2019.1615220?journalCode=tjov20>

Barsim, M., Bassily, M., El-Batsh, H., Rihan, Y. H., Sherif, M.M., Numerical simulation of an experimental atrium fires in combined natural and forced ventilation by CFD, *International Journal of Ventilation*, 2019, 1-24

<https://www.tandfonline.com/doi/abs/10.1080/14733315.2018.1524196?journalCode=tjov20>

Abdelwaly, M. El-Batsh, H., Hanna, M., Numerical study for the flow field and power augmentation in a horizontal axis wind turbine, *Sustainable Energy Technologies and Assessments* 31, 2019, 245-253

<https://www.sciencedirect.com/science/article/abs/pii/S2213138817301558>

Belal Y. Belal, Ali M.A. Attia, . H. M. El-Batsh, H.A. Moneib flame and emissions characteristics of waste cooking oil- jet a-1 blend of 20% using lean pre-vaporized pre-mixed combustion technique, *Proceedings of ICFD13, Thirteenth International Conference of Fluid Dynamics* 21-22 December, 2018, Cairo, EGYPT

El-Seesy, A., Attia, A., El-Batsh, H., The effect of Aluminum oxide nanoparticles addition with Jojoba methyl ester-diesel fuel blend on a diesel engine performance, combustion and

emission characteristics, Fuel 224, 147-166, 2018.

<https://www.sciencedirect.com/science/article/abs/pii/S0016236118304848>

Hamdy, O., Bassily, M., El-Batsh, H., Mekhail, T., Numerical study of the effect of changing the cyclone cone length on the gas flow field, Applied Mathematical Modelling, vol. 46, 2017, pp. 81–97.

<https://www.sciencedirect.com/science/article/abs/pii/S0307904X17300756>

Nada, S., El-Batsh, H., EElattar, H., Ali, N., CFD investigation of airflow pattern, temperature distribution and thermal comfort of UFAD system for theater buildings applications, Journal of building engineering, 2016, page 274-300

<https://www.sciencedirect.com/science/article/abs/pii/S2352710216300419>

El-Batsh, H., Attia, Ali, El-Shahat, S., Experimental and Numerical Investigation for the Aerodynamics of a Linear Compressor Cascade, 1st Aviation Engineering Innovations Conference, 21-22 March 2015, Luxor, Egypt

Abdelwaly, M., Bassily Hanna, M., El-Batsh, H., Effect of wind turbine shroud on the flow and power generated from a horizontal-axis shrouded wind turbine, 1st Aviation Engineering Innovations Conference, 21-22 March 2015, Luxor, Egypt

Bassily Hanna, M., El-Batsh, H., Dyab, M., Abdelsamee, A., Studying of heat transfer and fluid flow characteristics, 1st Aviation Engineering Innovations Conference, 21-22 March 2015, Luxor, Egypt

Attia, A., El-Seesy, A., El-Batsh, H., Shehata, M., Effects of alumina nanoparticles additives into jojoba methyl ester-diesel mixture on diesel engine performance, accepted for publication at ASME 2014 International Mechanical Engineering Congress & Exposition, IMECE2014-39988, November 14-20, 2014, Montreal, Canada

Attia, A., El-Zoheiry, R., El-Batsh, H., Shehata, M., Combustion characteristics of jojoba methyl ester as an alternative fuel for gas turbine, accepted for publication at ASME 2014 International Mechanical Engineering Congress & Exposition, IMECE2014-39991, November 14-20, 2014, Montreal, Canada

El-Batsh, H., Bassily Hanna, M., Abdelwaly, M., Effect of wind turbine shroud on the flow and power generated from a horizontal-axis shrouded wind turbine, accepted for publication at ASME 2014 International Mechanical Engineering Congress & Exposition, IMECE2014-38547, November 14-20, 2014, Montreal, Canada

Seyam, Sh., Huzayyin, A., El-Batsh, H., Nada, S., Experimental and numerical investigation of the radiant panel heating system using scale room model, Energy and Buildings 82, 130–141, 2014.

El-Batsh, H., Nada, S., Abdo, S., Mohamed, A., Effect of secondary flows on heat transfer of a gas turbine blade, International Journal of Rotating Machinery, Volume 2013 (2013), Article ID 79784

El-Batsh, H., Improving cyclone performance by proper selection of the exit pipe, Applied Mathematical Modelling, vol. 37, 2013, pp. 5286-5303.

El-Batsh, H., Nada, S., Abdo, S., Mohamed, A., Three Dimensional Heat Transfer Characteristics through a Linear Gas Turbine Cascade, Journal of Engineering Sciences, Faculty of Engineering, Assiut University, May 2013, pp. 947-970.

El-Batsh, H., Effect of squealer tip on the aerodynamic losses downstream of an annular turbine cascade, accepted for publication at Mansoura Engineering Journal, Vol. 37, No.1, March 2012, M24-M39.

Huzayyin, A., El-Batsh, H., Nada, S., Seyam, S., Experimental and numerical investigation of a condensation repellent radiant cooling panel system, Journal of Engineering Sciences, 40(4):1075-1089, 2012.

El-Batsh, H., Effect of the radial pressure gradient on the secondary flow generated in an annular turbine cascade, International Journal of Rotating Machinery, 2012, Article ID 509209, 14 pages

El-Batsh, H., Doheim, M. A., and Hassan, A. F., On the application of mixture model for two-phase flow induced corrosion in a complex pipeline configuration, Applied Mathematical Modelling, Vol. 36, 2012, pp. 5686–5699.

El-Batsh, H., Bassily Hanna, M., Numerical and experimental aerodynamic investigation on shrouded wind turbines and estimation of power generation, Bulletin of the Faculty of Engineering, Faculty of Engineering, Minia University. Vol. 31, No.1, January 2012.

El-Batsh, H., Effect of exit pipe on the flow and particle separation in tangential inlet cyclone separators, Bulletin of the Faculty of Engineering, Faculty of Engineering, Minia University. Vol. 31, No.1, January 2012.

El-Batsh, H., Bassily Hanna, M., An investigation on the effect of endwall movement on the tip clearance loss using annular turbine cascade, International Journal of Rotating Machinery, 2011, Article ID 489150, 11 pages.

Dohem, M., El-Batsh, H., Hassan, A. Prediction of Hydrogen Sulfide Corrosion in Petroleum Refinery Complex Pipelines, ICFD10-EG-3063, Tenth International Congress of Fluid Dynamics, December 16-19, Stella Di Mare Sea Club Hotel, Ain Soukhna, Red Sea, Egypt, 2010.

El-Batsh, H. , M. Bassily Hanna, A study of the loss generated due to the tip clearance flow downstream of an annular turbine cascade, ICFD10-EG-3056, Tenth International Congress of Fluid Dynamics, December 16-19, Stella Di Mare Sea Club Hotel, Ain Soukhna, Red Sea, Egypt, 2010

El-Batsh, H. , Bassily Hanna, M., Mohamed, , Sherif, M., Effect of the tip clearance gap on the flow and loss mechanism through a linear turbine cascade, ICFD10-EG-3055, Tenth International Congress of Fluid Dynamics, December 16-19, Stella Di Mare Sea Club Hotel, Ain Soukhna, Red Sea, Egypt, 2010

Doheim, M., El-Batsh, H., Hassan, A., Prediction for the mass transfer and oxygen corrosion in complex pipelines, ICFDP9-EG-271, Proceedings of ICFDP9, Ninth International Congress of Fluid Dynamics & Propulsion, December 18-21, 2008, Alexandria, Egypt.

Doheim, M.A., El-Batsh, H., Hassan, A.F., Hydrodynamic investigation of two-phase flow in complex pipeline configurations with reference erosion-corrosion, The 10th International Mining, Petroleum, and Metallurgical Engineering Conference, March 6-8, 2007.

Doheim, M.A., El-Batsh, H., Hassan, A.F., Hydrodynamic investigation of single-phase flow in complex pipeline configurations with reference erosion-corrosion, The 10th International Mining, Petroleum, and Metallurgical Engineering Conference, March 6-8, 2007.

Nada, S.A.; El-Batsh, H. and Moawed, M., Heat transfer and fluid flow around semi-circular tube in cross flow at different orientations, Heat and Mass Transfer, vol. 43, pp. 1157-1169, 2007.

El-Batsh, H., Reducing tip leakage flow by modifying the tip geometry of a turbine blade, The scientific Bulletin, Faculty of Engineering, Ain Shams University, 2007

El-Batsh, H., Turbine tip leakage flow characteristics for squealer and flat tip geometries, Scientific Bulletin, Faculty of Engineering, Minia University, vol. 26, part 1, 2007.

El-Batsh, H., Bassily Hanna, M.; Sherif, M.F.; An experimental and numerical study of the tip clearance effect on the three-dimensional flow field through a linear turbine cascade, Eighth International Congress of Fluid Dynamics & Propulsion, Sharm El-Shiekh, Egypt, December 14-17 2006.

El-Batsh H., Abd El-Hamied A.A, Hamed, M.H., Numerical and experimental study of the flow field and particle dynamics through cyclone separators, ASME/ATI Conference on Energy: Production Distribution and Conservation, Milan, Italy, May 14-17 2006.

El-Batsh H., Numerical study of the flow field through a transonic linear turbine cascade at design and off-design conditions, Journal of Turbulence, Volume 7, No. 5, 2006.

El-Batsh H., Numerical study of the flow field through a transonic linear turbine cascade at design and off-design conditions, 4th International Engineering Conference, Mansoura-Sharm El-Shiekh, April 20-22, 2004.

Nada, S.A.; El-Batsh, H. and Moawed, M., Experimental and numerical study of the flow field and forced convection around semi-circular tube in cross flow at different angles of attack, Scientific Bulletin, Faculty of Engineering, Ain Shams University, Vol. 40, No. 2, June 30, 2005.

El-Batsh H. and Bassily Hanna, M., Numerical and experimental prediction of secondary flow through a rectilinear cascade for different aspect ratios, International Mechanical Engineering Conference, Kuwait, December 5-8, 2004.

El-Batsh H., Haselbacher H., Numerical investigation of the effect of ash particle deposition on the flow field through turbine cascades. ASME Paper GT-2002-30600, ASME TURBO EXPO 2002, Amsterdam, The Netherlands, June 3 - 6, 2002.

El-Batsh, H., Modelling of the effect of particle deposition on the performance of turbine Blades. Projekteam den ZentralenApplikationsservern 2001, Bericht des EDV-Zentrums der TechnischenUniversität Wien, pp. 155 – 160, 2001.

El-Batsh H., Haselbacher H., Effect of gas and surface temperatures on particle deposition on turbine blades. Fourth European Conference on Turbomachinery - Fluid Dynamics and Thermodynamics, Florence, Italy, March 20 - 23, 2001.

El-Batsh, H., Effect of particle deposition on the performance of turbine blades. Projekteam den ZentralenApplikationsservern 2000, Bericht des EDV-Zentrums der TechnischenUniversität Wien, pp. 139 – 148, 2000.

El-Batsh H., Haselbacher H., Effect of turbulence modelling on particle dispersion and deposition on compressor and turbine blade surfaces. ASME Paper 2000-GT-519, ASME Turbo Expo 2000, Munich, Germany, May 8 - 11, 2000.

El-Batsh, H., Modelling Particle deposition on compressor and turbine blade surfaces. Projekteam den ZentralenApplikationsservern 1999, Bericht des EDV-Zentrums der TechnischenUniversität Wien, pp. 185 – 194, 1999

El-Batsh, H., Modelling particle deposition on compressor and turbine blade surfaces. Projekteam den ZentralenApplikationsservern 1998, Bericht des EDV-Zentrums der TechnischenUniversität Wien, pp. 163 – 172, 1998.

Awad, T., Hamoudda, R., El-Batsh, H., Steam generator mathematical model and its application on practical data, The Eighth International Conference for Mechanical Power Engineering, Alexandria University, Alexandria, Egypt, April 27-29, 1993

Selected Technical Experience

The Engineering Company for Project Services (ProService) -Nasr City-Egypt:

- Analysis of Al Sad Stadium (Qatar) Air Conditioning System

Chemicals for Modern Building

- Heat transfer through railway steel bars
- Investigation of panel cooling systems