

**Nael Barakat**  
**Professor and Chair of Mechanical Engineering**

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**Education**

<b>Ph.D.</b>	Mechanical Engineering, McMaster University, Hamilton, ON. Canada,	2000
<b>M.A.Sc.</b>	Mechanical Engineering, Concordia University, Montreal, QC. Canada.	1996
<b>B.Eng.</b>	Mechanical Engineering, Kuwait University, Kuwait,	1989

**Academic Experience**

- The University of Texas at Tyler (UT-Tyler), TX. USA	
Professor and Chair of Mechanical Engineering	(2018 – Present)
- Fulbright Specialist – US State Department Scholarship Board	(2022 – 2026)
- ABET Program Evaluator / Team Chair (Volunteer)	(2018 – Present)
- Texas A&M University – Kingsville (TAMUK), TX. USA	(2016 – 2018)
Associate Dean for Research and Graduate Studies, and Director of the Sustainable Energy Systems Engineering PhD Program, Professor of Mechanical Engineering	
- Grand Valley State University (GVSU), MI, USA	(2005 – 2016)
Professor of Engineering - Mechanical	(2013 – 2016)
Mechanical Engineering Program Chair	(2010 - 2016)
- Lake Superior State University (LSSU), MI, USA	(2002 - 2005)
Assistant Professor – Mechanical Engineering - Tenure Track	

**Non-Academic Experience**

- Agere Systems – Formerly Lucent Technologies, PA. USA	(2001 - 2002)
Automation and Control Development Engineer	
- Brown and Sharpe Manufacturing Co. RI. USA	(1999 – 2001)
Research Metrologist	

**Current Membership in Professional Organizations**

- Licensed Professional Engineer in Ontario, Canada (PEO).	(2000 - present)
- American Society of Mechanical Engineers (ASME).	(Fellow, Member since 1995)
- American Society of Engineering Education (ASEE).	(Member since 2002)
- European Society for Engineering Education (SEFI).	(Member since 2011)
- Educational Society of the Institute for Electrical and Electronics Engineers (IEEE)	(Member since 2024)

**Honors and Awards**

- ASME Edwin F. Church Medal	(2020)
- ASME McDonald Mentoring Award	(2014)
- ASME Dedicated Service Award	(2012)
- ASME student section advisor award – District B (2 <sup>nd</sup> time)	(2011)
- Elected Fellow of the ASME	(2010)
- GVSU Distinguished Early-Career Award	(2010)

**Grants**

**Pending:** U\$ 88,802 (PI) NSF-ER2: Collaborative Research: Creating an Evidence-Based Framework and Vision for Enhancing Ethics Education in Engineering/Technology R&D, (with Purdue U and Kansas U.) - (submitted Jan 2025).

**In Progress:** U\$ 10,000 (PI): Purgerite Inc. – ASHRAE Geothermal standards establishment (2024-2025)

**Completed:**

1. U\$ 10,000 (Co-PI): Sonozaire Ozone production devices development (2023-2024)

2. U\$ 25,020 (Co-PI) UT-Tyler Internal Grant: Development of a Portable Desalination and Power System Based on Renewable Energy (2023-2024).
3. U\$ 100,000 (PI): Trane Technologies R&D in HVAC and Air Quality (2022-2023)
4. U\$ 300,000 (PI since Aug 2019): Trane Technologies Research & Development in HVAC and buildings' energy management involving faculty and students (2017-2022).
5. U\$ 30,000 (PI) HAAS foundation grant for mechanical / manufacturing students support (2020-2024).

#### **Service to the Profession and to the community**

1. Reviewer: European Journal of Engineering Education (EJEE) (2023 – Present)
2. American Society of Mechanical Engineers (ASME)
  - a. Elected and served on the EC including Chair of the Management Division of ASME (2019 – 2022)
  - b. Elected and served as ASME - District B leader (2011 – 2014)
  - c. Elected and served as the Chair of the Technology and Society Division (2012 – 2021)
2. American Society of Engineering Education (ASEE)
  - a. Served as Secretary/Treasurer/Program-chair/Chair of the Engineering Ethics Division (2013 - 2016)
  - b. Continue to serve as a reviewer and session chair for the ASEE annual conferences (2002 - present)
  - c. Served as chair and moderator for multiple sessions during the ASEE- North Central Section meeting (2009)
3. National Institute of Engineering Ethics (NIEE)
  - a. Elected chair of the board of the National Institute of Engineering Ethics (NIEE) (2023-2024)
  - b. Elected Vice President of the NIEE 2017-2018, 2022 – 2023.

#### **Principal Publications and Presentations (last five years)**

##### **Refereed Journals**

1. Aziz Shekh-Abed and Nael Barakat, "Association Between Components of Systems Thinking and Soft Skills Among Engineering Students," Global Journal of Engineering Education (GJEE), Sep. 2024.
2. Aziz Shekh-Abed and Nael Barakat, "Challenges to Systems Thinking and Abstract Thinking Education During the COVID-19 Pandemic," International Journal for Engineering Education (IJEE), Jan. 2023.
3. Aziz Shekh-Abed and Nael Barakat, "Challenges and Opportunities for Higher Engineering Education During the COVID-19 Pandemic," International Journal for Engineering Education (IJEE), Feb. 2022.

##### **Refereed Conference Proceedings and Presentations**

4. B. Jesiek, J. Hess, N. Barakat, S. Wilson, "Horizons of Engineering Ethics Education (HEEE): Survey Results and Meeting Highlights," Proceedings of the ASEE Annual Conference and Exposition, Montreal, QC, Canada, June 2025.
5. M. Massad, N. Barakat, and M Salim, "Rapid Testing and performance Improvement of a Portable Desalination System Powered by Renewable-Energy," 10<sup>th</sup> Thermal and Fluid Engineering Conference (TFEC), March 9-12, 2025, George Washington university, Washington, DC.
6. N. Barakat, S. Chou, M. Salim, H. Seyyedhosseinzadeh, "Introducing AI Tools in The Engineering Curriculum," SEFI Annual Conference, Sep. 2024, Lausanne, Switzerland.
7. Aziz Shekh-Abed and Nael Barakat, "Systems Thinking Among Engineering Students," ICL 2023, 26<sup>th</sup> International Conference on Interactive Collaborative Learning, Madrid, Spain, Sep. 2023.

#### **Invited Contributions and Professional Seminars/Workshops**

##### **1. Invited Keynote Speaker:**

- a. 7<sup>th</sup> International Conference on Advances in Mechanical Engineering (ICAME), "Integrating and Testing AI in Mechanical Engineering Education," Dec. 24 – 26, 2024, Istanbul, Turkey.
  - b. 7<sup>th</sup> Teaching and Learning Conference, Digital Transformation and 21<sup>st</sup> Century Skills, "Experimenting with Available AI-based Tools in Engineering Education," Sohar University, Sohar, Oman, Sep. 2024.
- The 16<sup>th</sup> Congress of Mechanics, May 21 – 24, 2024, "Integrating AI in the Engineering Education - Mechanical Engineering as an Example," cadi Ayyad University, Marrakesh, Morocco.