

Paul I. Ro, Professor
Department Chair, Mechanical Engineering
Baylor University

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EDUCATION:

- B.S. in Mechanical Engineering (High Distinction), University of Minnesota, Minneapolis, MN
- M.S. in Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA
- Ph.D. in Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA

PROFESSIONAL EXPERIENCE:

Baylor University

8/2018 - Present **Professor and Department Chair** of Mechanical Engineering at Baylor University

North Carolina State University

5/12 - 7/2018 **Associate Department Head, Director of Graduate Programs,**
Mechanical and Aerospace Engineering, NC State University

8/01 - 7/2018 **Professor,** Mechanical and Aerospace Engineering,
NC State University

8/94 - 7/01 **Associate Professor** of Mechanical and Aerospace Engineering,
Precision Engineering Center, NC State University

7/95 - 12/95 **Visiting Associate Professor** (Sabbatical Leave)
Dept. of Machine Design and Production Engineering
Seoul National University, South Korea

2/89 - 7/94 **Assistant Professor,** Mechanical and Aerospace Engineering
Precision Engineering Center, NC State University

5/93 - 6/93 **Foreign Science Analysis Fellow** of Office of Naval Research
Dept. of Precision Machinery and Engineering
University of Tokyo, Japan

9/82 - 12/88 **Research Assistant,** Laboratory for Manufacturing and
Productivity, M.I.T., Cambridge, MA

GRADUATE RESEARCH SUPERVISION AS COMMITTEE CHAIR:

Post-doctoral and Exchange Visiting Fellows: 4, 0 Current
Ph.D. Students (advised / co-advised): 16/1, 2 Current at Baylor
M.S. Students (advised / co-advised): 20/0, 0 Current at Baylor

PROFESSIONAL MEMBERSHIP:

American Society of Mechanical Engineers (ASME)
American Society of Precision Engineers (ASPE)
Korean Scientist and Engineers Association (KSEA)
Tau Beta Pi (Honor Society)

CONSULTING ACTIVITIES:

Digital Equipment Corporation (6/85 - 1/89)

Caterpillar, Inc. (5/00 – 8/00)
Eugenix Systems Inc. (1/2005 – 4/2008)

PATENTS:

United States Patent #4,761,588; Date: 8/2/88; Inventors: K. Youcef-Toumi, P.I. Ro

LIST OF RECENT PUBLICATIONS

1. Barah Ahn, Vikram C. Patil, and Paul I. Ro, “Effect of Integrating Metal Wire Mesh with Spray Injection for Liquid Piston Gas Compression,” *Energies* **2021**, 14 (13), 3723, <https://doi.org/10.3390/en14133723>
2. Vikram C. Patil and Paul I. Ro, “Modeling of Liquid-Piston based Design for Isothermal Ocean Compressed Air Energy Storage System,” *Journal of Energy Storage*, **31** (2020), doi.org/10.1016/j.est.2020.101449
3. Vikram C. Patil, Jun Liu, and Paul I. Ro, “Efficiency Improvement with Liquid Piston Compressor using Metal Wire Mesh for Near-isothermal Compressed Air Energy Storage Application,” *Journal of Energy Storage*, **28** (2020), doi.org/10.1016/j.est.2020.101226
4. Vikram C. Patil, Pinaki Acharya, and Paul I. Ro, "Experimental Investigation of Water Spray Injection in Liquid Piston for Near-isothermal Compression,” *Applied Energy*, **259** (2020), doi.org/10.1016/j.apenergy.2019.114182
5. V.C. Patil and P.I. Ro, “Experimental Study of Heat Transfer Enhancement in Liquid Piston Compressor using Aqueous Foam,” *Applied Thermal Engineering*, **164** (2020), doi.org/10.1016/j.applthermaleng.2019.114441
6. V.C. Patil, P. Acharya, P.I. Ro, “Experimental Investigation of Heat Transfer in Liquid Piston Compressor,” *Applied Thermal Engineering*, **146** (2019), 169-179, doi.org/10.1016/j.applthermaleng.2018.09.121
7. Vikram C. Patil and Paul I. Ro, “Energy and Exergy Analysis of Ocean Compressed Air Energy Storage Concepts,” *Journal of Engineering*, Vol **2018**, Article ID 5254102, 14 pages, doi.org/10.1155/2018/5254102, **2018**
8. H.S. Bhaskaran, P.I. Ro, J-K. Park, K.R. Ramakrishnan, “Analysis of a Novel Technique for Temperature Rise Abatement in Liquid Piston Compressors – External Gas Injection,” *ASME Journal of Thermal Science and Engineering Applications*, **9**(2), pp 024503-1~13, [doi: 10.1115/1.4035969](https://doi.org/10.1115/1.4035969), **2017**
9. R. Agarwala, P.I. Ro, “Separated Pitch Control at Tip (SePCaT): Innovative Blade Design Explorations for Large MW Wind Turbine Blades,” *Journal of Wind Energy*, Vol. 2015, Article ID 895974, 12 pages, [doi:10.1155/2015/895974](https://doi.org/10.1155/2015/895974), **2015**
10. J. Kim, P. I. Ro, “Forced Convection Cooling of Low-power Handheld Devices using a Vibrating Cantilever Beam,” *ASME Journal of Thermal Science and Engineering Applications*, **7**(2), pp 021010-1~11, [doi: 10.1115/1.4029677](https://doi.org/10.1115/1.4029677), **2015**
11. J. Kim, P. I. Ro, “Feasibility Study on Thermoacoustic Cooling for Low-Power Handheld Electronic Devices,” *ASME Journal of Thermal Science and Engineering Applications*, **7**(2), pp 021001-1~9, [doi:10.1115/1.4029351](https://doi.org/10.1115/1.4029351), **2015**
12. J-K. Park, P.I. Ro, X. He, A. Mazzoleni “Analysis, Fabrication and Testing of Liquid-Piston Compressor Prototype for Ocean Compressed Air Energy Storage (OCAES),” *Marine Technology Society Journal*, **48**(6), pp 86-97, **2014**
13. R. Agarwala, P.I. Ro, “3D Analysis of Lift and Moment Adaptation via Control Surface Deployment on a 5MW Wind Turbine Blade,” *Wind Engineering*, Vol. **37** (5), pp 447-468, **2013**
14. J-K. Park, P.I. Ro, “Non-contact Manipulation of Light Objects based on Parameter Modulation of Acoustic Pressure Nodes,” *ASME Journal of Vibration and Acoustics*, Vol. 135 (3), pp 031011-7, **2013**
15. S. Lim, A. Mazzoleni, J-K. Park, P.I. Ro, B. Quinlan, “Conceptual Design of Ocean Compressed Air Energy Storage System,” *Marine Technology Society Journal*, **47** (2), pp 70-81, **2013**