

PAUL K. WRIGHT

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Professional Preparation

University of Birmingham, England

Industrial Metallurgy

B.Sc. 1968

University of Birmingham, England

Industrial Metallurgy

Ph.D. 1971

Appointments

2013-Present *Director and Professor*, Berkeley Energy & Climate Institute (BECI)

2007-Present *Member*, National Academy of Engineering

2006-2013 *Director*, Center for Information Technology Research in the Interest of Society (CITRIS)

1999-Present *Co-Director*, Berkeley Manufacturing Institute, University of California at Berkeley

1999-Present *Co-Director*, Berkeley Wireless Research Center

1991-Present *A. Martin Berlin Professor of Mechanical Engineering*, University of California at Berkeley

1987-1991 *Professor of Computer Science and Director of the Robotics and Manufacturing Research Laboratory*, Courant Institute of Mathematical Sciences, New York University

1979-1987 *Professor of Mechanical Engineering and The Robotics Institute*, Carnegie-Mellon University, Pittsburgh, PA

1978 *Research Associate in Physics*, Cavendish Laboratory, University of Cambridge, England

1975-1978 *Senior Lecturer*, Dept. of Mech. Eng., Univ. of Auckland, New Zealand

1972-1975 *Research Engineer*, Dept. of Sci. and Ind. Res., Auckland, New Zealand

Selected Products

1. S. Roundy, **P.K. Wright** and J. Rabaey, *Energy Scavenging for Wireless Sensor Networks with Special Focus on Vibrations*, Kluwer Academic Publishers, published in 2004, 1- 212 pages, ISBN Number 1-4020-7663-0.
2. A.C. Waterbury and **P.K., Wright**, "Vibration energy harvesting to power condition monitoring sensors for industrial and manufacturing equipment," *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, June 2013. Volume 227(6): pp.1187-1202 (This paper won the SAGE Best Paper Prize in 2013 from the editorial board of the *Journal of Mechanical Engineering Science*).
3. Q. Xu, I. Paprotny, M. Seidel, R.M. White and **P.K. Wright**, "Stick-on Piezoelectromagnetic Current Sensing AC Current Monitoring of Circuit Breaker Panels," *IEEE Sensors Journal*, March 2013, Volume 13, No. 3, pp. 1055 - 1064
4. I. Paprotny, Q. Xu, W.W. Chan, R.M. White and **P.K. Wright**, "Electromechanical Energy Harvesting from Current-Carrying Conductors," *IEEE Sensors Journal*, January 2013, Volume 13, No. 1, pp.190 – 201.
5. L.M. Miller, P. Pillatsch, E. Halvorsen, **P.K. Wright**, E.M. Yeatman, and A.S. Holmes,

Synergistic Activities

- *Design, manufacturing and energy systems* – a broad field of technology that spans product design, mechanisms, robotics, sensors, rapid-prototyping, wireless sensor networks, IT systems, and automated manufacturing & inspection of products. Contributions to this field have resulted in his being elected a Member of the National Academy of Engineering (NAE); a Fellow of the Society of Manufacturing Engineers (SME); a Fellow of the American Soc. of Mechanical Engineers (ASME). Numerous awards from these organizations.
- *Energy Scavenging and Storage to support Wireless Sensor Networks*: - was first funded by NSF (1999), and is now by Siemens and the CEC - California Energy Commission (2003-present). In the CEC funded research with Prof. Arens, Rabaey, Culler, Pister, Evans, White and Sanders, the larger societal goal is to reduce electricity use, especially during peak-loads, in buildings. The research includes the deployment of low-power Wireless Sensor Networks (WSNs) to monitor and control temperatures and comfort in buildings. Yet, WSNs are still hampered by the use of replaceable batteries. Dr. Wright's ongoing work thus focuses on: i) vibration-scavenging devices at the MEMS scale; ii) pneumatic *dispenser-printing* of storage
- *Open-architecture Manufacturing, Sensors, and Internet-based Manufacturing*: - was funded by NSF and other agencies throughout the 1980s. Dr. Wright's group is credited in 1988 with the first Internet-based CAD/CAM system between a designer at CMU and a sensor-based open-architecture CNC machining center at the Courant Institute at NYU. From 1991, at Berkeley, he led (with Professor Sequin from Computer Science) the CyberCut project. In the 1990s, the National Science Foundation grants were called *CyberCut*, *MOSIS++*; *Agent-based Precision Manufacturing*; and an *Investigation of Design for Manufacturability Metrics and Methods* (with Professor Shah at ASU).
- *Catalyst for strategic collaborative programs*: co-founded the world-renowned *Robotics Institute at Carnegie-Mellon*, co-founded and co-directed the *Berkeley Manufacturing Institute (BMI)*, amongst others. Director of *CITRIS* for 7 years during the period of establishing Sutardja Dai Hall, its research programs, and stable funding. Now responsible for forming the campus and LBNL-wide *Berkeley Energy and Climate Institute*.

Collaborators

- Professors:** E. Arens (UC Berkeley), A. C. Arias (Berkeley), D. Culler (UC Berkeley), D.A. Dornfeld (UC Berkeley), J. Evans (UC Berkeley), B. Hartmann (UC Berkeley), K. Pister (UC Berkeley), J. Rabaey (UC Berkeley), S. Sanders (UC Berkeley), S. Sastry (UC Berkeley), C. Sequin (UC Berkeley), R. White (UC Berkeley), E. Yeatman & A. Holmes (both Imperial), T. Zohdi (UC Berkeley).
- Recent Ph.D. students advised at Berkeley (year and employment):** R. Xu (2014 Apple), J. Kaist (2013 Penn State), A. Waterbury (2013 Intuit Surgical), D. Madan (2013 John Hopkins), L. Miller (2013 Alphabet Energy), J. Wang (2013 Applied Materials), P. Minor (2013 CITRIS), A. Chen (2013 CITRIS), C. Ho, (2010 Imprint Energy), E. Leland (2009 CUNY), M. Koplow (2009 patent lawyer), D. Steingart (2008 Princeton), N. Ota, (2008 Trilliant), J. Wilson and Beth Reilly (2009 & 2007 both Exponent Design) – 38 PhDs advised overall, Currently advising six graduate students
- Post-Docs at Berkeley:** I. Paprotny (now at UIUC), S. Nguyen (Current), Pit Pillatsch (Current)