MEHRDAD "MARK" EHSANI, Ph.D.

SUMMARY

M. Ehsani received the B.S. and M.S. degrees from the University of Texas at Austin in 1973 and 1974, respectively, and the Ph.D. degree from the University of Wisconsin-Madison in 1981, all in electrical engineering.

From 1974 to 1977, he was with the Fusion Research Center, University of Texas, as a Research Engineer. From 1977 to 1981, he was with Argonne National Laboratory, Argonne, Illinois, as a Resident Research Associate, while simultaneously doing the doctoral work at the University of Wisconsin-Madison in energy systems and control systems. Since 1981, he has been at Texas A&M University, College Station, Texas where he is now a Professor of electrical engineering and Director of Advanced Vehicle Systems Research Program and the Power Electronics and Motor Drives Laboratory. He is the author of over 300 publications in pulsed-power supplies, high-voltage engineering, power electronics, motor drives, and advanced vehicle systems and is the recipient of the Prize Paper Awards in Static Power Converters and motor drives at the IEEE-Industry Applications Society 1985, 1987, and 1992 Annual Meetings, as well as numerous other honors and recognitions. In 1984, he was named the Outstanding Young Engineer of the Year by the Brazos chapter of Texas Society of Professional Engineers. In 1992, he was named the Halliburton Professor in the College of Engineering at A&M. In 1994, he was also named the Dresser Industries Professor in the same college. In 2001 he was selected for Ruth & William Neely/ Dow Chemical Faculty Fellow of the College of Engineering for 2001-2002, for "contributions to the Engineering Program at Texas A&M, including classroom instruction, scholarly activities, and professional service". In 2003, he was selected for BP Amoco Faculty Award for Teaching Excellence in the College of Engineering. He was also selected for the IEEE Vehicular Society 2001 Avant Garde Award for "Contributions to the theory and design of hybrid electric vehicles." In 2003, he was selected for IEEE Undergraduate Teaching Award "For outstanding contributions to advanced curriculum development and teaching of power electronics and drives." In 2004 he was elected to the Robert M. Kennedy endowed Chair in Electrical Engineering at Texas A&M University. In 2005, he was elected as the Fellow of Society of Automotive Engineers (SAE). He is the co-author of twelve books on power electronics, motor drives and advanced vehicle systems, including Vehicular Electric Power Systems, Marcel Dekker, Inc. 2003 and "Modern Electric Hybrid Vehicles and Fuel Cell Vehicles – Fundamentals, Theory and Design," CRC Press, 2004. He has over 23 granted or pending US and EC patents. His current research work is in power electronics, motor drives, hybrid vehicles and their control systems.

Dr. Ehsani has been a member of IEEE Power Electronics Society (PELS) AdCom, past Chairman of PELS Educational Affairs Committee, past Chairman of IEEE-IAS Industrial Power Converter Committee and past chairman of the IEEE Myron Zucker Student-Faculty Grant program. He was the General Chair of IEEE Power Electronics Specialist Conference for 1990. He is the founder of IEEE Power and Propulsion Conference, the founding chairman of the IEEE VTS Vehicle Power and Propulsion and chairman of Convergence Fellowship Committees. In 2002, he was elected to the Board of Governors of VTS. He also serves on the editorial board of several technical journals and is the associate editor of IEEE Transactions on Industrial Electronics and IEEE Transactions on Vehicular Technology. He is a Fellow of IEEE, an IEEE Industrial Electronics Society and Vehicular Technology Society Distinguished Speaker, IEEE Industry Applications Society and Power Engineering Society Distinguished Lecturer. He is also a registered professional engineer in the State of Texas.

PROFESSIONAL INTERESTS

- Electronics
- Solid State Power Systems
- Power Electronics
- Motor Drives
- Specialized Power Systems
- Control Systems
- Energy Storage Systems
- High Voltage Direct Current (HVDC) Power Transmission
- Applications of Microcomputers to Power Control
- Pulsed Power Systems
- Electric Hybrid Vehicles
- High Voltage Engineering
- Electrical Failures and Hazards
- Advanced Vehicle Power and Propulsion Systems
- Novel Electromagnetic Machines
- Sustainable Energy and Transportation

PROFESSIONAL EXPERIENCE

1981 to Present **Texas A&M University**

Founder of power electronics education and research program at Texas A&M University including a curriculum of two undergraduate and six graduate courses and three laboratories for teaching and research: presently the Power Electronics Group at Texas A&M consists of three faculty members and three visiting faculty members. The program enrolls over 100 undergraduate students annually and has had over 40 Ph.D. and 70 M.S. students up to the present.

1992 to Present **Director of Advanced Vehicle Systems Research Program, College of Engineering**

Founder of Advanced Vehicle Systems Research Program, College of Engineering, Texas A&M University, 1992, funded by Texas Engineering Experiment Station, Department of Electrical Engineering, and Texas Transportation Institute.

1992 to Present **Professor, Electrical Engineering**

1987 to 1992 **Associate Professor of Electrical Engineering**

1982 to Present **Director, Texas Applied Power Electronics Center, Department of Electrical Engineering**

1981 to 1987 **Assistant Professor, Electrical Engineering**

Founder and director, Texas Applied Power Electronics Center TAPC in Electrical Engineering Department, 1982, funded by Texas Engineering Station, Texas A&M Office of University Research, Texas Higher Education Coordinating Board and industrial companies. (A Multidisciplinary center working on the ELPH hybrid vehicle project. Six professors, Texas Transportation Institute and ten industrial companies are collaborating on ELPH, under TAPC, at the present time.)

1974 to 1977 **Fusion Research Center**
Research Engineer

1977 to 1981 **Argonne National Laboratory**
Research Engineer

OTHER PROFESSIONAL EXPERIENCE

- Consultant to many companies and government agencies since 1981.
- Technical expert for proposal reviews for the US National Science Foundation, Department of Energy, Environmental Protection Agency; Department of Commerce, Canadian National Science and Engineering Council; South African Foundation for Research and Development.
- World Bank expert for academic program development in Polytechnic Institute of Guayaquil, Equator.
- Outside expert Ph.D. examiner for Concordia University, Canada and Rand Afrikaans University and the University of Natal, South Africa, and others.

- Textbook manuscript reviewer for John Wiley & Sons, Inc.; CRC Press; Marcel Dekker, Inc.; Prentice Hall; West Academic Publishing Co. and others.

- IEEE Standards book reviewer for Power System Harmonics (IEEE Std. 519-199 X) and for the revision of Standards for Practices and Requirements for General Purpose DC Drives.

- Reviewer for journals and conferences of IEEE Industry Applications Society, Power Electronics Society, Industrial Electronics Society, Control Systems Society, IEEE Proceedings and a few others.

EDUCATION

Ph.D., Electrical Engineering, University of Wisconsin, Madison, 1981
MS, Electrical Engineering, University of Texas, Austin, 1974
BS, Electrical Engineering, University of Texas, Austin, 1973

LITIGATION RELATED EXPERIENCE

Experienced expert witness having prepared expert reports, given depositions and trial testimony in both district court and the ITC.

PUBLICATIONS

Books

1. Co-author: IEEE Guide for Self-Commutated Converters, ANSI/IEEE Std. 936, 1987.

2. Converter Circuits for Superconductive Magnetic Energy Storage, Co-Author: R. L. Kustom, Texas A&M University Press, 1988.

3. Contributor of Chapter on "Switched Reluctance Motor Drives" to Encyclopedia of Electrical and Electronics Engineering, John Wiley & Sons.

4. Contributor of Chapter on "Harmonic and Power Factor Control" to Encyclopedia of Electrical and Electronics Engineering, John Wiley & Sons.

5. Modern Electrical Drives, Co-Author: H. B. Ertan, et al., Klewar Academic Publishers, 2000, printed in the Netherlands.

6. Contributor of a chapter on "More Electric Vehicles" to CRC Handbook of Power Electronics, 2002

7. Contributor of a chapter on "More Electric Aircraft" to CRC Handbook of Power Electronics, 2002.

8. Contributor to SAE book "Hybrid Electric Vehicles," SAE SP-1633, published in 2001.

9. Co-author, "Combat Hybrid Power Systems Technologies, Technical Challenges and Research Priorities," a report of National Research Council of the National Academies, 2003.

10. Vehicular Electric Power Systems, Co-Authors: A. Emadi & JM Miller, Marcel Dekker, Inc. 2004.

11. Chapters contributor, "The 42-Volt Electrical System," Book, Society of Automotive Engineers, Inc. PT-99, ISBN 0-7680-1297-X, 2003.

12. "Modern Electric Hybrid Vehicles and Fuel Cell Vehicles – Fundamentals, Theory, and Design," M. Ehsani, Y. Gao, S. E. Gay, A. Emadi, CRC Press, 2004

13. Contributor of chapter on "Hybrid Drive Trains," to "Handbook of Automotive Power Electronics and Motor Drives" CRC Press, 2005.

14. "Modern Electric, Hybrid Electric, and Fuel Cell Vehicles," second Edition, CRC Press, 2010.

15. Volume Editor on Sustainable Vehicles, "Encyclopedia of Sustainability," Springer, to be released, 2011.

16. "Creativity," manuscript completed, to be published.

Journal Papers

1. R. E. Fuja, R. L. Kustom, and M. Ehsani, "Three-Phase Energy Transfer Circuit with Superconducting Energy Storage Coils," IEEE Trans. on Industry Applications, Vol. IA-16, No. 3, May/June 1980, pp. 438-444.

2. M. Ehsani, R. L. Kustom, and R. E. Fuja, "Microcomputer Control of a Current Source DC-DC Converter," IEEE Trans. on Industry Applications, Vol. IA-19, No. 5, September/October 1983, pp. 690-698.

3. M. Ehsani, R. L. Kustom, and R. W. Boom, "A One-Phase Dual Converter for Two Quadrant Power Control of Superconducting Magnets," IEEE Trans. on Magnetics, Vol. MAG-21, No. 2, March 1985, pp. 1115-1118.

4. M. Ehsani, et al., "High MVA Interrupters Using the GTO," Bulletin of American Physical Society, Abstract, May 1985.

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Sync your system to PACER to automate legal marketing.