

# IEEE Bangalore Section

## Distinguished Lecture

Title: **TRENDS IN AUTOMOTIVE STEERING SYSTEMS WITH ADVANCES IN ELECTRICAL ACTUATORS AND CONTROL**

Speaker: **Dr. TOMY SEBASTIAN**  
**Chief Scientist, Delphi Steering**  
**Saginaw, MI 48601, USA**

Venue: Seminar Hall, **CEDT, IISc, Bangalore**

Date & Time: July 8, 2008, (Tuesday) 4.00 PM

*Registration:*

The talk is open to everyone. There is no registration fees.  
Tea at 3.45 PM.

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**Abstract:**

Developments in control and power electronics and in electric machines are fuelling the application of Electrical Drives in automobiles. This is especially true in automotive steering systems where conventional hydraulic based systems are being replaced by electromechanical systems. In addition to providing the basic function of directional control, these systems are focusing more on comfort, fuel economy, and active safety. This presentation will discuss the trends in steering system technologies and the impact of the electrical motor drives on these technologies.

**Biography of the speaker:**



**Tomy Sebastian** (S'80, M'86-SM'94-F'03) received the B.Sc. (Eng.) degree from Regional Engineering College Calicut (presently National Institute of Technology, Calicut), India, in 1979, the M.S. degree from Indian Institute of Technology Madras in 1982, and MA.Sc. and Ph.D. degrees from the University of Toronto, Canada, in 1984 and 1986, respectively. From 1979 to 1980, he was with the R & D Center of KELTRON, Trivandrum, India. From 1987 to 1992, he was with the Research and Applied Technology Division of Black and Decker Corporation, Towson, MD. Since 1992 he has been working at the Innovation Center of Delphi Steering Systems, Delphi Corporation, Saginaw, MI, where he is currently the Chief Scientist. He also taught several courses on Power Electronics, Motor Drives and Advances Motor Design at University of Maryland, College Park, MD, The Ohio State University, Columbus, OH and University of Toronto, Ontario, Canada at various times.

Dr. Sebastian has done extensive research in the area of brushless motor issues and applications in steering systems. The work resulted in the first ever brushless motor based electric power steering system in the market. He has published over 45 technical articles and holds 20 US patents. In 2003 he was elected as a Fellow of IEEE with the citation "for contributions to the theory, design, and application of permanent magnet motors and drives in automotive systems". He is co-recipient of an IEEE Industry Application Society Transactions first-prize paper award. He was inducted in to the Delphi Innovation Hall of Fame in 2006.

Dr. Sebastian has been the Secretary (1992-1993), Vice Chair for Programs (1994-1995), Vice Chair for Paper reviews (1996-1997) and Chairman (1998-1999) of the Industrial Drives Committee of the Industry Applications Society. During 2002-2003, he has been the Vice Chair for paper reviews for the Industrial Power Conversion Systems Dept. of the IAS. As the Chair of the Industrial Power Conversion Systems Department, he also served in the IEEE Industry Application Society Board during 2004-2005. He will be the General Chair for the First IEEE Energy Conversion Congress and Exposition (IEEE ECCE 2009) to be held in San Jose, CA. He also serves on the editorial Advisory Board for the International Journal of Vehicle Autonomous Systems and for the Korean Institute of Electrical Engineers International Transactions on Electrical Machinery and Energy Conversion Systems.

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