



Fort Wayne Section News

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February 2003

FEBRUARY MEETING

**Featured Speaker:
2002-3 SAE International President
Dr. S.M. Shahed**

Dr. Shahed will discuss his experiences over the past year as SAE President,
and his research on
Advanced Turbo-Charging Technology for Fuel Economy and Low Emissions.

- LOCATION:** Goeglein's
7311 Maysville Road
Fort Wayne, IN
- DATE/TIME:** Wednesday, February 12th
5:30 pm Social
6:00 pm Dinner
6:45 pm Program
- COST:** \$15.00 SAE Members (and family members) with advance reservation
\$18.00 Non-members/or at the door
\$10.00 Student SAE members
\$12.00 Student non-members
- MENU:** Ribbon Slaw, Pork Cutlet, Oven Browned Potatoes, Stir Fry Vegetables,
Dinner Rolls & Butter, Apple Strudel.

ADVANCE RESERVATIONS Requested by 2pm Friday, February 7th.

Company reps are listed on the last page.

Visit our web site at www.saesections.org/fortwayne/ for program updates.

About the program....

The benefits of turbocharging on fuel economy and emissions in gasoline and diesel engine powered vehicles are described along with advances in turbocharging technology.

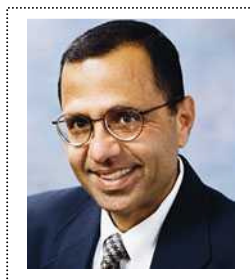
Traditionally, power and torque have been thought to be a function of engine displacement, enhanced by engine breathing capability through the use of multiple valves, optimized valve opening and timing, variable valve actuation, etc. Both power and torque are dependent on the amount of air supplied to the engine because, on the average, gasoline engines need an air fuel ratio of 9000:1 and diesel engines need 20,000:1 by volume. Hence, the supply of air is critical to the performance of engines.

It is shown that in gasoline engine powered vehicles, turbocharging enables engine downsizing and about 10 to 17% improvement in fuel economy for the same power and slightly improved performance. It is also shown that the same basic gasoline engine can cover a much wider range of power, thus enabling a very cost-effective rationalization of engine families.

Data are presented to show the benefits of turbocharging in diesel engines. It is shown that modern high speed, turbocharged diesel engine powered vehicles give better low speed torque than comparable gasoline engines, thus improving driveability. They also give 35 to 50% better fuel economy than comparable gasoline engines.

Advancements in turbocharging technology continue in pace with advancements in the rest of the vehicle systems. These include variable geometry mechanisms, electric actuation, electronic controls and electrically assisted turbochargers. These advancements contribute to further improvements in fuel economy and reduction in emissions.

About the speaker....



Dr. S. M. Shahed
Vice-President, Advanced Products & Systems
Garrett Engine Boosting Systems
Honeywell International, Inc.

Dr. Shahed's responsibilities include the development of Advanced Air Management Systems for boosting diesel and gasoline engine performance, fuel economy and emissions control. Dr. Shahed has a mix of academic and industry experience. He has worked at Cummins Engine Co. and Southwest Research Institute and held faculty positions at the University of California, Berkeley, and University of Texas at San Antonio. He holds a B.E. (1966) from Osmania University, Hyderabad, India and an M.S. (1969) and Ph.D. (1970) from the University of Wisconsin, Madison.

Dr. Shahed has authored many technical papers in the field of combustion, chemical kinetics of pollutant formation, diesel and gasoline engine emissions control technology, turbocharging and

supercharging of engines, etc. SAE, ASME, IMechE, Combustion Institute and several other societies have published his papers. Several of these papers have received international recognition for their technical excellence - James Clayton Award, IMechE, 1975; Horning Memorial Award, SAE 1982; and Arch T. Colwell Merit Award, SAE, 1984. In addition, he was awarded SAE's Excellence in Oral Presentation Award in 1991. For his outstanding technical contributions, he was elected Fellow of SAE and ASME in 1991. He also was elected Fellow of the Institute for the Advancement of Engineering in 1999. The University of Wisconsin, Madison, recognized him with a Distinguished Service Citation in 2001.

In addition to sustained technical contributions, he has worked energetically in SAE serving as Fuels and Lubricants Activity, member (1973-98), vice-chair, Combustion & Emissions (1983-85), and again vice-chair, Combustion (1992-94), Ralph J. Teetor Industrial lecturer (1986), Horning Board of Awards, member (1987-90), chair (1990), technical program chair, Future Transportation Technology Conference (1993), Technical Program co-chair, Fuels & Lubricants Meeting (1996), general chair, Future Transportation Technology Conference (1998), chair, Southern California Section (2000-01). For his sustained contributions to SAE, he was awarded the Forest R. McFarland Award in 1985 and again in 1995. He has served SAE as a member and chair of several Coordinating Research Council (CRC) committees.

Dr. Shahed also has been active in other technical societies serving the Combustion Institute as member, Board of Advisors, Central States Section (1978-88), director (1984-86), chairperson (1986-88) and ASME as member, Internal Combustion Engine Board of Associates.

Dr. Shahed lives in Torrance, California with his wife Asha. They have one daughter, Joohi, who graduated from Baylor Medical College and is training to be a Neurologist. He enjoys reading a wide range of subjects, running, bicycling and working among their fruit trees in sunny Southern California.

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What's Happening ?

Northeastern Indiana Regional Science and Engineering Fair

Volunteers are needed to judge the entries at the regional science fair for special awards sponsored by our SAE Section. Please consider spending a very enjoyable Saturday morning at IPFW on March 22 - you will be amazed ! Donuts and coffee for breakfast and lunch provided. Contact Marty Blessing at 428-3275 or marty.blessing@nav-international.com for information.

National Engineers Week

National Engineers Week recognizes engineers and celebrates engineering achievements that have improved and advanced our lives. SAE Fort Wayne Section along with other professional engineering organizations, IPFW, Science Central, area schools and residents honor engineering and celebrate National Engineers Week. Many programs start early in the fall and proceed until Saturday, February 22, 2003 ending with the Engineers Week Banquet that evening. Find out more at <http://www.indiana-eweek.org/>.



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Please make meeting reservations and dinner payments with your company representative :

Rich Taylor	Dana Corporation, Churubusco
David Gibson	Cooper Standard
Dan Gochenour	Eaton Clutch, Auburn
Steve Burman	Dana Corporation, Spicer Axle
Dan Grohnke	International Truck and Engine Corporation
Bongsu Kang	IPFW
Ramiro Bravo	Tri-State University
Feng Lin	Indiana Institute of Technology
Jim Roussev	All Others (P) (260) 486-8500

**Please send any changes of address or e-mail to:
John Hess (260) 423-4043 john.hess@dana.com**

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