

NEXT MEETING OCTOBER 16

HIGHLIGHTS...

- *This Month's Presentation... Engineering Simulation Tools*
- *Message from the Chair*
- *Recap of Last Meeting*
- *October Coffee Talk*
- *Receive Newsletter by Email*
- *San Francisco and Honda Partner on Fuel Cell Car*
- *Newsletter Ad Section*

Dinner Presentation...

Engineering Simulation Tools

Presented by

Martin Martínez and Carl John Poplowsky

The Arizona section of the SAE welcomes two of the Principals of the Engineering Science Analysis Corporation (ESA) as they will be our featured speakers for the October Meeting. Carl Poplowsky will be addressing members on thermal analysis techniques using the latest in software simulation tools. Martín Martínez, who spoke to us three years ago, will be presenting structural analysis techniques with the latest in software simulation tools. Together, Carl and Martín will demonstrate how these software tools, in conjunction with classical techniques and correlation to test, are essential in enabling companies to bring to market the products that meet their customer's expectations.

October's presentation affords a valuable opportunity to both practicing engineers and for their managers to gain insight into the use and applicability of engineering simulation tools. Bring along your questions, as Carl and Martín are both very knowledgeable in the field of mechanical engineering. Managers, if you need straight answers on practicality of certain software tools, this is a meeting you need to attend.

Martin Martínez

Mr. Martínez is President of ESA and is providing consulting services to a number of local companies. Mr. Martínez has consulted in the Valley since 1991 by offering specialized analysis and engineering services to customers including Honeywell, AlliedSignal Aerospace, Motorola and Intel. His analytical skills were honed at AlliedSignal (now Honeywell) from 1984 to 1996. He led research and development activities as a Program Manager at the now Kulicke and Soffa Corporation (Gilbert) from 1996 to 1999. ESA provides services in the following fields: structural, thermal, magnetics, dynamics, life prediction, elastic/plastic non-linear deformations, fracture mechanics, composites, fast fracture reliability, correlation of test data to model and product design. Mr. Martínez holds a BSME from the University of Arizona.

Carl John Poplowsky

Mr. Poplowsky is Vice President of Engineering for ESA Corporation, responsible for managing all mechanical engineering consulting activities, including business development, analytical methods, and customer applications. Mr. Poplowsky previously served as a pre- and post-sales technical consultant for the Western Sales Region of Structural Dynamics Research Corp., Milford, OH., where he provided support for the I-DEAS CAD/CAE software package. From 1988 to 1992 he served as an Engineering Specialist at Allied Signal Fluid Systems (Tempe) where he was responsible for mechanical, thermal, and fluid design, analysis, and testing of aircraft pneumatic components, space power systems, and cryogenic liquid turbopumps. While at McDonnell Douglas Helicopter Co. (Mesa) from 1985 to 1988, Mr. Poplowsky was a Senior Engineer for US Army Apache helicopter environmental control, electronic systems cooling, and anti/de-icing programs. From 1980 to 1985 Mr. Poplowsky served as a Senior Engineer for Allied Signal Turbine Engine Co. (Phoenix). Mr. Poplowsky holds MSME and BSME degrees from Purdue University.

DATE	TIME	LOCATION	COST
Thursday	Social - 6:00 pm	Holiday Inn (Phoenix Airport)	Students - \$10
October 16	Dinner - 7:00 pm	44th St. & Washington	Members - \$18
	Presentation - 8:00 pm	602-273-7778	Guests - \$19

***RSVP by 2:00 pm Monday October 13. Call Robert Q. Riley: 623-872-3475**

Message From the Chair.....

A big thanks to those of you who came out and attended the first meeting of our 2003-2004 year! I believe that we had nearly 60 attendees; a fantastic turnout by any standard. The governing board takes this as a positive affirmation for the work we've done in putting together a top quality list of dinner meeting topics for the year. Personally, I was pleased to be seated between two first time attendees at the meeting. It's a lot of fun getting to know new members in the Section.



Todd Zuercher

We were fortunate to have both a coffee talk speaker and our featured speaker at the meeting. This was the first time in many months that we had both. We look forward to having a similar arrangement for the upcoming October meeting.

Michelle Argyle gave an engaging overview of the types of services she offers in her business as a professional business coach. Michelle works one-on-one with clients to identify ways for us to all achieve our goals in our career and personal life. During her talk, I could not help but think of how she could help many engineers with their communication and management skills.

Steve Trimble's presentation was insightful, informative, and very timely. The combination of solar energy and an efficient source of power generation is an attractive combination in today's environmentally conscious world. Steve's talk covered the basics of the Stirling engine, how solar energy can provide the external heat source required for operation, and the economics and logistics of implementing such a system. The volume of questions both during and after Steve's presentation showed how interested people really are in new technologies such as this.

October promises to be another great month for our members. SAE Executive Vice President Emeritus (and Arizona resident!) Max Rumbaugh will be giving a coffee talk on his recent trip to the Intelligent Vehicle Conference in San Diego. Following Max's remarks, several engineers from ESA Corporation will be giving us a talk on the latest engineering design, simulation, and analysis tools. It promises to be a great learning experience and I'm sure it will be an eye-opener for many as well.

Our Section Board continues to refine and finalize the presentation topics and other Section activities for the remainder of the 2003-2004 year. If anyone has input they would like to provide, please contact one of the Governing Board Members.

We hope to see you in October!

Todd Zuercher

Recap of Season's First Meeting

By Kevin Willson

Thanks to Steven W. Trimble of Stirling Energy Systems, Inc. for making our first dinner meeting of the season a big success. On September 18, the Arizona chapter of the SAE kicked off

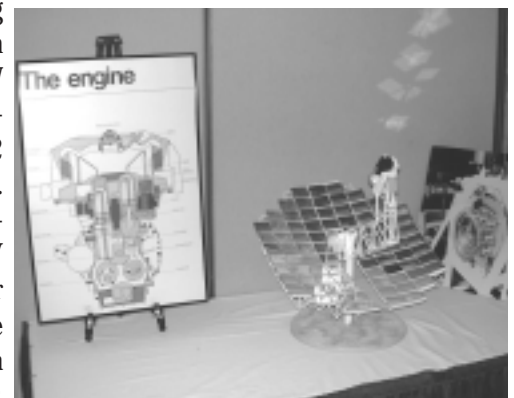


Steven W. Trimble (left) and Todd Zuercher

the year with a look into Stirling Engines, Solar Energy and the Hydrogen Economy, showing a glimpse of the future in ground based power generation.

Steve, a past Chairman of the Arizona SAE and Vice President of SES, began with an overview of the Stirling Cycle engine. Originally patented in 1816 by Robert Stirling, a Scottish Minister, the term Stirling Engine is used to describe all types of closed cycle regenerative gas engines. The SES Solar Dish Stirling System utilizes a Hydrogen Cycle Stirling Engine powered by solar energy that is collected by a reflective dish. The heat from the sun causes the Hydrogen gas in the engine to expand, driving the pistons, which in turn generates electricity. This electricity can be used directly to feed into the power grid during on peak hours, or used to run electrolysis for generating Hydrogen to be used in fuel cells or powering generators during the night. The SES System can also act as a stand alone power system for a remote location such as rural farms or in underdeveloped countries.

The SES system since 1984 has held the record for converting solar energy into grid-quality electricity with a current peak efficiency of 29.4%. They have recently completed testing with the DOE and Sandia National Labs and are currently working with APS on installing a 25kW second generation dish for a 12 month study. SES is also working with UNLV to bring solar power to the state of Nevada and also has projects working in Spain and South Africa.



Display of SES Stirling engine and concentrator disk.

SES is now working to put the Dish System into mass production to reduce the cost and make a large scale solar

generating plant financially feasible. By scaling up to mass produce the components of the dish systems, economies of scale will bring the cost of the systems down dramatically and make a solar generating station a reality. Look for Stirling Energy Systems, Inc. to be a leader in the solar power industry for many years to come.

Thanks to everyone who attended this wonderful presentation and for being a part of the Arizona SAE. There are a lot of exciting presentations planned for this year that we hope you can attend.



A room full of Stirling engine enthusiasts, including guests who arrived from Las Vegas, just to hear Steve's presentation.

October Coffee-Talk

Max Rumbaugh will report on the latest developments in intelligent transportation systems. He recently returned from the Intelligent Vehicle Conference in San Diego where experts met to share technology and developments.

You may recall that Max gave us an insightful presentation last season on the state of the art in hybrid vehicles. His take on these high-technology subjects is especially important. While serving as Executive Vice President of SAE International, Max has been privileged to a view of automotive technology developments that few of us enjoy.

Sign up to Receive Your Newsletter by Email

Beginning this month, we will make a gradual transition to an electronic Newsletter. Members who subscribe will receive a monthly email containing a link to the newsletter. Simply click on it to receive your newsletter. To subscribe, go to: <http://www.sae-arizona.org/newsletter/> and click on the appropriate link.

In the September newsletter, the cost to provide printed newsletters by mail was listed as \$3,000 per year. Since then, we received notification that our printing costs will nearly double this year due to an increase in paper prices.

San Francisco and Honda to Partner on Fuel Cell Car Program

American Honda announced on September 23, 2003, that it will supply two Honda FCX hydrogen powered fuel cell vehicles, the world's first commercially certified fuel cell car, to the City of San Francisco. This makes San Francisco one of the first U.S. cities to



Honda FCX to join San Francisco Fleet

commit to the use of Honda's advanced fuel cell technology in pursuit of improved air quality and energy sustainability. The City also intends to create hydrogen refueling infrastructure to support regular daily operation of the vehicles by city employees.

"This is a very exciting day for the city of San Francisco as it takes a leadership role by putting hydrogen-powered fuel cell vehicles into practical, everyday use," said Mayor Brown. "San Francisco's commitment to becoming a hydrogen city is being realized today with the addition of Honda fuel cell vehicles to the city fleet."

The hydrogen-powered Honda FCX is the only fuel cell vehicle to earn full certification by both the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency for everyday commercial use. The FCX is also distinguished by being the first fuel cell vehicle to earn a place in the EPA fuel economy ratings (51city/48highway).

"San Francisco has more than 700 advanced technologies vehicles in the City's fleet and one of the nations largest alternative fuel infrastructures," said Jared Blumenfeld, Director of the Department of the Environment. "Adding the Honda hydrogen-powered fuel cell car is the next critical milestone in our evolution towards non-polluting vehicles. Over the next few years we hope to provide a model for other cities wanting to make hydrogen fuel cells a reality."

The FCX uses fuel cell technology to convert hydrogen into electricity with water and heat as the only byproducts. The vehicle is driven by an electric motor with power assist provided by a Honda-developed ultra-capacitor.

As part of its efforts to bring fuel cell technology to the market, Honda plans to place about 30 fuel cell cars in the U.S. and Japan over the next three years. Honda undertook fuel cell research in 1989 and has been road testing vehicles in the United States since 2000. Honda has also been a member of the California Fuel Cell Partnership based in Sacramento, Calif., since 1999.

Ad Section to Appear in Newsletter

Beginning with this issue, a special advertising section will appear in our newsletter. Ads will be accepted on the basis of their relevance to SAE members. For more information and advertising rates, please go to:
<http://www.saeazona.org/newsletter/>

Mech/Aero Design Engineer

Prescott, AZ firm has multi-year US Army contract for precision airdrop. Our "vehicle" will control gliding parachutes to deliver 10K and 30K pound cargo packages to precise landing coordinates. Applicants with 5+ yr industry experience please visit **wamore.com** to learn more and to submit resumes.



Meeting Schedule

October 16	- Engineering Simulation Tools
November 20	- Patent Law: Protecting Your Ideas
December	- NO MEETING
January 15	- Advances in Road Surfaces Technology
February 10	- Retractable Hardtop Technology
March 18	- Aerospace Professionals Roundtable (tentative)
April 15	- Program to be determined
May 20	- Program to be determined

Todd Zuercher
Chair
480-441-1595

Kevin Willson
Vice Chair
602-997-7593

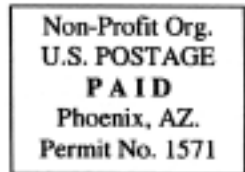
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