

It is a great pleasure to be the part of *Sampark*. It gives me immense pleasure in extending my warm Greetings to all the readers of *Sampark*.

*Sampark* has done better & better since its start in December 2010. I wish all the best to this new endeavor of SAENIS and hope that *Sampark* will cross all the previous milestones of communication, and create a platform for information sharing and idea exchange among the members of automotive industry.

Here it would be fair to highlight the importance of such regular communication for recent technological advancements that are happening across the world in automotive and allied areas.

Indian automotive industry has shown a continuous growth path in spite of irregularities like economic up downs & Fuel prices. Competition has grown rapidly seeing the market potential. Needless to say we have to speed up the work on fuel efficient, light weight and cost competitive automotive options for Indian market. SAENIS is providing the right platform for sharing of new technologies and innovations.

My request to all the SAE members is to continue and renew their membership in time, so as to spread the thoughts and knowledge using this valuable platform for the benefit of all of us.

Wishing a happy reading!!

Dinesh N Dave  
Vice Chair Membership- Student Activities  
Vice President (Engineering- Body) - MSIL



This month's issue is featuring **Mr. A K Sehgal**, Deputy General Manager, IOCL and Vice Chair Student Activities, SAENIS MC 2012 in the section **FACE-2-FACE...**



## In this Issue...

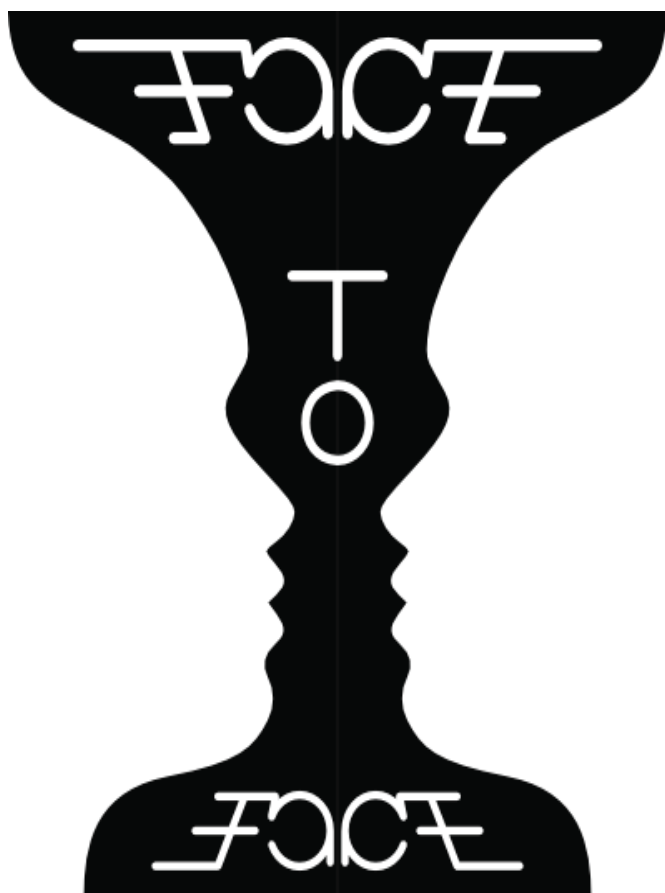
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### **Vision for SAENIS:**

My vision is to spread awareness about SAENIS to college students, motivate them to participate in SAE activities and enable them to access new developments in automotive technology.

**We wish Mr. Ajay Kumar Sehgal All the Best!!!!**



*This month, we are introducing Mr. Ajay Kr. Sehgal, our new SAENIS Management Committee member 2012-2014 in this column.*

**Mr. Ajay Kr. Sehgal**, General Manager, Indian Oil Corporation Ltd. (R&D Center) & Vice Chair Student Activities - SAENIS

### **An introduction:**

Mr. Sehgal is an energetic person with a positive outlook towards life. He is a great enthusiast, who is always keen in taking initiatives in order to come up with something new. He keeps on motivating his team to perform better than its previous performance. He is a very practical person who believes in setting tangible targets and future goals.

### **Professional Highlights :**

- Involved in setting-up engine test lab at IOC R&D centre
- Automation of engine test benches and upgrading utility services.
- Development of lubricants for automotive, railroad and marine applications through standard and indigenous engine tests.
- NPMP award for development of multi-grade railroad lubricant.
- Planning and setting-up new generation ASTM tests for lubricant evaluation.
- Development of test methods on indigenous engines for screening lubricant performance.
- Heading the Automotive Research and instrumentation Dept.
- Management representative for ISO activities.
- Participation in BIS –member of 'Energy Management Sectional Committee'.

### **Qualification and Experience:**

Mr. Sehgal did his BE (Mech. Engg.) from Malviya Regional Engg. College Jaipur in 1981. He has thirty years of experience in Engine Testing for fuels and lubricant evaluations at R&D Centre of Indian Oil Corporation Ltd.

### **Experience in SAENIS:**

He has been an SAE member since 1999. He is associated with AWIM and has been motivating schools for participating each year and nominating personnel for training school students.

## Design and Implementation of Robotic Automation System

Maruti Suzuki, SAE India (Northern section) & DIFACTO Robotics and Automation Systems are jointly organising a Seminar on "Design and Implementation of Robotic Automation Systems" to be held on 06th July 2012, at Japanese Hostel, Gurgaon.

This seminar is targeted towards Mechanical, Industrial, Automation & Robotics Engineers from Industry as well as towards the Engineering students & teacher fraternity.

The guest speaker from DIFACTO, Mr. Ajay Gopalswamy will share the latest trends in the field of Industrial Robots, common applications of Industrial Robots and various steps to implement robot automation in the industry.

A case study will be presented to demonstrate in detail the implementation of Robot automation in the industry. In addition, this workshop would give an opportunity to get an insight into the latest applications of Robotic Automation in the industry.

Registrations are open and are being arranged by SAENIS office.



## TECH BUZZ Super Intelligent Catalyst

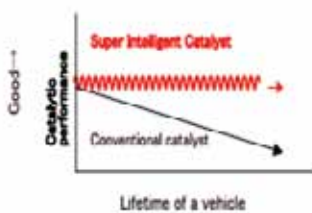
Catalytic converters are widely used to reduce the amounts of nitrogen oxides, carbon monoxide and unburned hydrocarbons in automotive emissions. The catalysts are finely divided precious-metal particles dispersed on a solid support. During vehicle use, the converter is exposed to heat, which causes the metal particles to agglomerate and grow, and their overall surface area to decrease. As a result, catalyst activity deteriorates. Conventional catalyst systems thus incorporate a sufficient excess of precious metal to guarantee continuous catalytic activity for vehicle use over 50,000 miles (80,000 km).

The Super Intelligent Catalyst provides all three of the most commonly used precious metals (palladium, platinum and rhodium) with a self-regenerative function, thus successfully minimizing the degradation of the catalyst's exhaust gas purification performance.

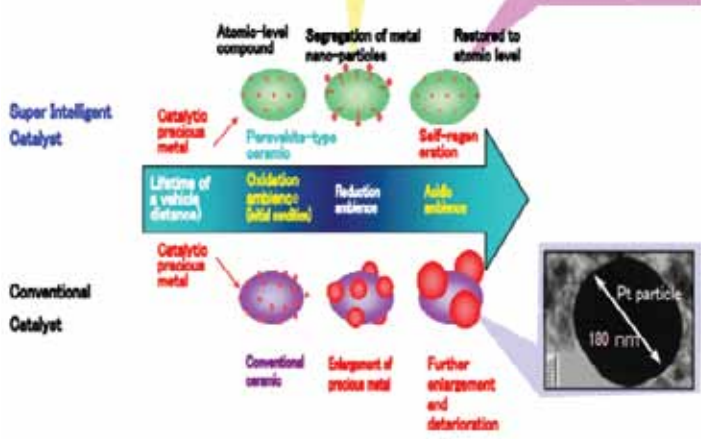
The Super Intelligent Catalyst has the capability to sense ambient changes, adapt its structure and function, and perform appropriately at all times. The metal ions of platinum and rhodium are replaced in a special perovskite-type ceramic crystal lattice, and surrounded by six ions of oxygen.

For example, in a gasoline engine, Platinum and rhodium react in response to an inherent fluctuation in the oxygen concentration of exhaust gas. Platinum and rhodium come out of the perovskite-type ceramic crystal and form metallic nanoparticles when there is insufficient oxygen. Conversely, when there is surplus oxygen, the metallic nano-particles of platinum and rhodium return to the perovskite-type crystal as metal ions. This motion is repeated according to the natural fluctuation of the exhaust gas, and is called the self-regenerative function.

<Catalyst's purifying performance vs. travel distance>



<Comparison of precious metal conditions in vehicle lifetime>



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