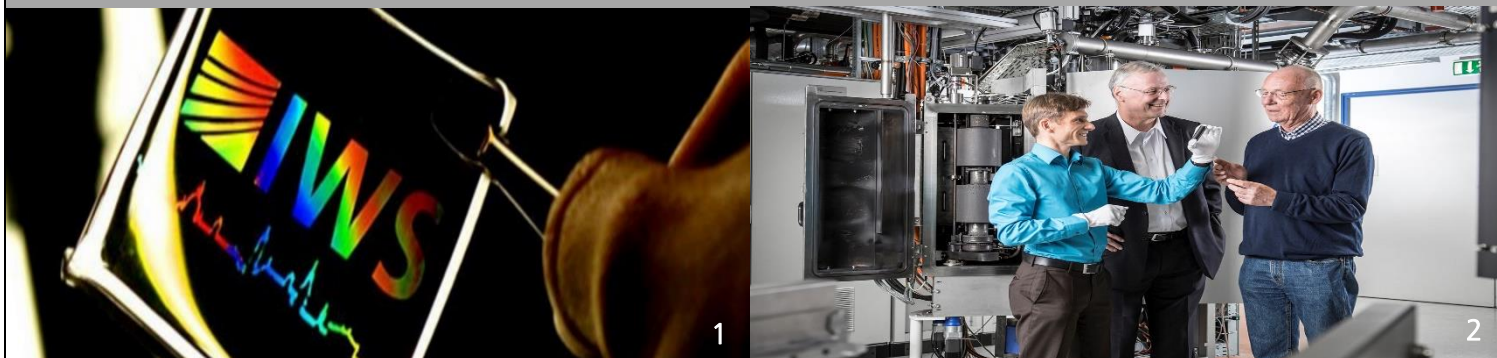


Diamond like Coating that Saves Fuel

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Greetings from Fraunhofer Office India.

Founded in 1949, **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe, where 69 Institutes and Research units conduct its research activities across locations in Germany. Fraunhofer-Gesellschaft employs a staff of 24,500, who are qualified scientists and engineers working with an annual research budget totalling more than 2.1 billion Euros. Our global footprint is very strong with offices and research centres in the USA, Europe and Asia. Some of our renowned innovations are the birth of MP3 format, the white LED, record for best solar cell efficiency and the smallest of cameras ever imagined.

Fraunhofer Institute for Material and Beam Technology IWS focuses on application-oriented research and development, covering all steps: starting with physical- and material- technological basic knowledge and ending with holistic systems development. The area of interest covers two broad field, one laser technology (e.g. laser welding, cutting, coating, hardening, cleaning) and, second on surface technology (e.g. laser build up welding, cladding, thin film technology, vapor deposition, process monitoring and nano particle technology).

Depositing diamond-like carbon to minimize friction is well established. However, achieving high coating thickness, high production rate and extra high level of precision to conduct the job is yet a challenge. Now, Fraunhofer IWS has developed a laser arc method with which layers of carbon almost as hard as diamond can be applied on an industrial scale at high coating rates and with high coating thicknesses of up to 20 micrometers. Such coatings are applied using laser arc method, which functions similar to an old-fashioned projector. The arc is initiated by a laser pulse on the carbon target, producing a plasma consisting of carbon ions, further depositing as coating on the intended work piece.

Such carbon coatings could be applied to engine components such as piston rings and pins, assisting in reduction of fuel consumption. The systematic application and implementation of this technology can save more than 100 billion liters of fuel each year over the next ten years. These tetrahedral amorphous carbon coatings are significantly harder and thus more resistant to wear than conventional diamond-like coatings.

Kindly get in touch with us if you are interested in this technology or require further information.

Thanks and Regards,

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