NASA keen on India-made technology for spacecraft

A new thermal spray coating technology used for gas turbine engine in spacecraft developed by a Rajasthan-based researcher has caught the attention of a NASA scientist, an official said.

Expressing his interest in the research, James L. Smialek, a scientist from NASA wrote to Dr. Satish Tailor after it was published in the journal *Ceramics International* and *Thermal Spray Bulletin*, said S.C. Modi, the chairman of a Jodhpur-based Metallizing Equipment Company (MEC).

Cost-effective

While working at MEC as a chief scientist, Research and Development, Dr. Tailor developed the controlled segmented Yttria-Stabilised Zirconia (YSZ)-Plasma sprayed coating technology, which according to him could reduce the thermal spray coating cost by almost 50%.

“In simple language, vertical cracks (segmentation) in the coating are beneficial for gas turbine engine application used in spacecraft,” Dr. Tailor said.

“At present, researchers are developing such cracks through very expensive processes (in several crore) and cracks are generated during the coating deposition process, and crack generation is not controllable,” he said.

Dr. Tailor said he had shared his research papers with the NASA scientist who had written him an email regarding this. Scientists working at the country’s leading research organisations — the Council of Scientific and Industrial Research (CSIR) and Defence Research Development Organisation (DRDO) — are equally impressed with the new technology.

Dr. R.M. Mohanty, the chief scientist at the CSIR headquarters in New Delhi, said that the outcome of the reported R&D presented an inexpensive solution for superior survival of current YSZ thermal barrier coatings produced by atmospheric plasma sprayed (APS) technique, and had a potential of wider industrial/strategic acceptability.

DRDO scientist Dr. R.K. Satpathy said if it could be industrially adopted to make a strain-tolerant coating then it would definitely be more economical.

Just what exactly needed such special protection and secrecy is still unknown.

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