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# Corrosion is a heavy drain on GDP, says PU Vice-Chancellor

India loses 5% to 7% of GDP annually due to it: Gurmeet Singh

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"India loses an estimated 5% to 7% of its GDP annually due to losses incurred from corrosion-related damages," Gurmeet Singh, Vice-Chancellor of Pondicherry University, said.

During a recently organised public lecture on "Electrochemistry in daily life", Mr. Singh, who has specialised in corrosion and smart materials, also noted that households could save up to 30% of their budget if corrosion-related damages are controlled scientifically.

Pointing out that "any unwanted decay" or, to put it another way, "losing electrons" was corrosion, the Vice-Chancellor said no pure metal could be immune to corrosion as they tend to decay naturally, unless stored in vacuum. "Therefore, every material is liable to get corroded as soon as it is exposed to air. Hence,



Gurmeet Singh

protecting the metals from corrosion needs a basic understanding of science," he said.

According to Mr. Singh, several expenditures appear to be recurring, but with the appropriate usage of anodic and cathodic components, these expenditures could be curtailed. The correct usage of the rule of thumb, "anodes corrode and cathodes get protected", could save our maintenance expenditure by up to 30%, he said.

"If we look into the order

of certain elements in the electrochemical series, then we will notice that for most of the cathode components, there are anodic components that help the cathode component from getting corroded. For instance, if iron (Fe) is a cathode, then aluminium (Al) is an anode that keeps it from corroding," he explained.

To illustrate how some chemical components could prevent metal surfaces from decomposing, he pointed to how the condition of tourist buses remained largely intact after many years, while a public transport corporation's brand new bus tended to start corroding after some time. "The difference is in the proper usage of anodic components. The body of a bus always has an aluminium plate that runs around the body, which functions as an anode because the rest of the body behaves with cathodic properties," he said.