Sunrise in a steel town?

It is an exciting yet challenging time for steel as environmental legislation, new energy sources and government support for manufacturing are creating the opportunities to revolutionize the metals sector to produce low-carbon, high-value-added products.

The benefits of a modernized energy- and raw material-flexible industry producing high-value products are obvious but can only be enabled through a joint commitment from the entire industry sector, government and the academic community.

Using the case of steel as an example, this lecture explores new technologies to reduce the environmental and financial cost of production. This discussion will investigate innovative blast furnace/melting technology and downstream processes and disruptive technologies to replace traditional routes.

Success will mean remaining competitive in an era of high energy costs and exploiting alternative and indigenous energy. Development of effective processing routes for value added steel products is key, as are solutions that enable differentiation and flexibility at the latest possible stage of steel manufacturing.

This lecture will highlight the unique industry-university research environments in which Sridhar Seetharaman has worked, as well as the broad range of technology readiness levels in which he engaged.

About the speaker

Sridhar Seetharaman is a professor and associate vice president for research at the Colorado School of Mines and holds a joint appointment at the National Energy Technology Laboratory. He is the director for the advanced energy systems graduate program and a deputy master cartographer in the Department of Energy’s National Alliance for Water Innovation hub.

Seetharaman served with the Department of Energy as a senior technical advisor and was responsible for clean water and next-generation electric machines. He was the Tata Steel/RAEng joint chair and director of materials strategy for the High Value Manufacturing Catapult at the University of Warwick. Previously, Seetharaman served as the POSCO Professor at Carnegie Mellon University and the co-director of the Industry-University Consortium, Center for Iron and Steelmaking Research. He was also a faculty fellow at the National Energy Technology Laboratory, working on materials for fossil fuel power.

Seetharaman was a visiting professor at University of Science and Technology, China and the Brahm Prakash Honorary Visiting Chair at the Indian Institute of Science. He has graduated over 30 doctoral students and published more than 200 journal papers. Seetharaman has received numerous best paper awards, the Friedrich Wilhelm Bessel Research Prize and an NSF CAREER Award. As a teacher he was recognized with a Benjamin Teare Teaching Award, the Philbrook Prize and an Elliott Lecturer Award.

He is the editor for AIST Transactions and an associate editor for Metallurgical and Metals Transactions A, B and E. Seetharaman is also on the international advisory board for Steel Research International and the Iron and Steel Institute of Japan. He received his doctorate from the Massachusetts Institute of Technology and his undergraduate degree from the Royal Institute of Technology in Sweden.