



Hardarshan Singh Valia

Hardarshan Singh Valia completed his M.Sc. Tech. in applied geology at Nagpur University, India; his M.A. in geology at Bryn Mawr College; and his Ph.D. in geology at Boston University. After teaching for a short period at Case Western Reserve University and Oberlin College, he entered the industrial world in 1979 as a research engineer at Inland Steel Co.'s research and development laboratories in East Chicago, Ind., USA. His initial work began with improving blast furnace performance/operation by finding ways to improve coke strength after reaction (CSR) with CO₂, which resulted in the development of a CSR predictive model. The model is successfully used to predict CSR from coal properties and helped increase CSR, resulting in performance and operation improvements at the No. 7 blast furnace.

During his career, Valia worked on a wide range of projects: coke behavior in the blast furnace utilizing blast furnace tuyere sampling; modification of Chinese beehive cokes for blast furnace usability; coal selection and blend design for heat recovery/non-recovery and slot oven cokemaking; research on carbonization behavior of coal in heat recovery/non-recovery and slot oven cokemaking; use of poor-quality (low-rank) coals in cokemaking; prediction of coking quality of coal reserves; effect of oxidation on coke quality; new cokemaking technologies; coal selection and coal behavior in blast furnace pulverized coal injection; and the use of additives in cokemaking, ironmaking, and steelmaking.

Valia retired from ArcelorMittal as a staff scientist in 2002 and started a consulting firm, Coal Science Inc. Valia has been conferred with the AIST 2023 Distinguished Member and Fellow award and is also the recipient of the American Iron & Steel Institute President Medal (1989), AIST Joseph Becker Award (1999), and AIST Joseph S. Kapitan Award (2005).