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FIRST Newsletter

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Liberation on the Event Horizon

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The world is entering its third year in which COVID-19 is eating up most of our all-interpersonal social contacts, like a black hole eats up matter. Like many other events scheduled for the beginning of 2022, an important event for the steel industry got postponed as well: the, 70th Indian Foundry Congress, IFEX and Cast India Expo, being organized at Helipad Ground Exhibition Center, Gandhinagar, Gujarat, India has been shifted from February to the 17th to 19th April, 2022.

As winter draws to a close, and the Omicron variant appears to accelerate the transition from pandemic to endemic, the new IFEX date shines as light of liberation on the event horizon of the COVID black hole. With India being world's number two in total crude steel production 2021 [1], and its promising motto "Business Beyond Boundaries", it is time to ring the bell for IFEX 2022 early.

High-quality steel is a driver of innovation and an indispensable material for numerous sectors. One key success factor for any metal manufacturer and foundry is a complete elemental analysis. Bruker AXS is committed to support the metals industry by supplying state-of-the art analyzers, like spark Optical Emission Spectrometry (OES), combustion/ fusion analyzers for special elements, and a full line of X-Ray Fluorescence (XRF) spectrometers.

Excellent support for the Indian metals industry and foundrymen for OES is ensured by our partner: Dynamic Technology Systems Pvt Ltd. (DTS), which will be introduced in an upcoming issue. Be part of the liberation and visit the DTS booth at IFEX 2022 (hall 1, booth 32) and get to know the latest addition to Bruker's OES product line, the Q4 POLO, a true analytical giant in its first appearance at an event in India.

With the Q4 POLO, reliable, high-precision analyses are now available for every foundry and production facility: outstanding performance with cast iron and nitrogen analysis of low-alloy steels down to 20 ppm are just two of many capabilities to experience.

The metal industry relies on high quality raw materials. The S6 JAGUAR, Bruker's powerful benchtop wavelength dispersive XRF (WDXRF) spectrometer, enables high precision quality control of iron ore, coke, coal, and more. Equipped with a 400 W X-ray tube and a compact goniometer, the S6 JAGUAR achieves excellent results even for low concentrations of light elements such as F, S, and Cl. At the furnaces, XRF is a well-established technology to monitor the slag composition and thus optimize the dosage of slag enhancing additives such as lime and dolomite. The slag composition needs to be tuned to an equilibrium condition for maximum action on the metal purity, least attack on the refractory lining, and optimal physical properties. Reliable and fast analysis of EAF and LMF slags in 5 min is a task for the S2 PUMA Series 2.

To enable accurate and precise process and quality control from day one, Bruker developed the METAL-QUANT package for the S8 TIGER Series 2 WDXRF. METAL-QUANT covers more than 23 elements in all kinds of ferrous and non-ferrous metals and alloys. With only one universal calibration based on the unique variable alpha model for matrix correction, users can get immediate results for any metal sample without prior knowledge about the composition. METAL-QUANT automatically recognizes the major elements and selects the optimal measurement conditions. Also, it minimizes the measurement time for minor elements based on counting statistical optimization. No further user interaction is required. The S8 TIGER Series 2 with METAL-QUANT is the perfect solution for metal production sites, foundries, central labs, and commercial service labs.

References:

[1] World Steel Association: https://worldsteel.org/media-centre/press-releases/2022/december-2021-crude-steel-production-and-2021-global-totals/

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