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Fully automated antimixup solution with LIBS technology, ensuring 100% check of the bar and billet proven over years of process operation.

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A reliable material identification along the entire rolling process chain is a high priority in today's rising demand on fault-free shipment. For special alloy producer, a mixup in delivered product could result in complete cancellation of the shipment, penalty charges as well as loss in reputation. In this regard, currently used positive material identification (PMI) technologies such as spark, XRF or magnetic induction testing face challenges such as small diameter bar, need for surface preparation and physical contact, yearly radiation safety certificate or reference bar. Therefore, there is a growing need for PMI solution that is inline applicable, incorporates fully automated sample preparation (e.g. remove human operator), controlled by level 2 system, precise (e.g. comparison based on heat chemistry) and universal (e.g. bright bar, black bar, billet).

LIBS (laser-induced breakdown spectroscopy) based sensor opens a new opportunity toward digital rolling mill, providing real-time material composition analysis without interrupting production. Depending on the risk of mix-up, this PMI sensor can be integrated into the existing process (e.g. finishing line, NDT line, before reheating furnace), fully compatible with the MES systems and enables fast intervention to correct mix-ups or other material-related issues. This oral presentation will discuss long-term process operation data from different LIBS-based PMI sensors currently operational in multiple producer's facilities.

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