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Flow Measurement in Liquid Aluminium Using Lorentz Force Velocimetry ANDRE THESS, YURII KOLESNIKOV, CHRISTIAN KARCHER, VITALY MINCHENYA, Ilmenau University of Technology — We report a series of non-contact flow measurements in molten aluminium using a novel technique called Lorentz force velocimetry (LFV). This technique consists in exposing the flow to a magnetic field and measuring the force that acts on the magnet system. We explain the basic physical principles of the technique and show that it permits one to obtain reliable and accurate contactless flow measurements in a variety of materials processing applications.

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