

Title (en)
Metallurgical assembly

Title (de)
Metallurgische Anlage

Title (fr)
Installation métallurgique

Publication
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Application
EP 10190154 A 20101105

Priority
• DE 102009052173 A 20091106
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Abstract (en)
The metallurgical plant comprises a contact region for hot material, and a functional element, which is provided from an energy supply element (4) having an electrical energy. The energy supply element is formed as thermoelectric generator that is thermally connected with the contact region for hot material, and with a colder region of the plant. The thermoelectric generator is formed as Peltier elements and comprises a plate made of semiconductor material. The functional element comprises a transmitter for a measured signal and a sensor (3', 3''). The metallurgical plant comprises a contact region for hot material, and a functional element, which is provided from an energy supply element (4) having an electrical energy. The energy supply element is formed as thermoelectric generator that is thermally connected with the contact region for hot material, and with a colder region of the plant. The thermoelectric generator is formed as Peltier elements and comprises a plate made of semiconductor material. The functional element comprises a transmitter for a measured signal and a sensor (3', 3''), which is a temperature-, pressure- or force sensor. A heat transfer element is arranged between the contact region for hot material and a side area of the thermoelectric generator and is formed as a heat pipe, a cylinder or rod made of copper or silver. The heat transfer element is partially surrounded by a thermal and/or electric isolation element. The functional element and the energy supply element are situated in a common housing (18), where the housing has a cylindrical base shape. The housing is a component of a fastening element of the metallurgical plant such as an expansion screw. The function element is arranged in the form of a temperature sensor and also in the form of a transmitter. The metallurgical plant is formed for contacting with liquid-, hot-, and solid metal as a converter, a vessel for liquid metal and as a blowing lance.

Abstract (de)
Die Erfindung betrifft eine metallurgische Anlage (1), die einen Kontaktbereich (2) für heißes Material aufweist, wobei in der metallurgischen Anlage (1) mindestens ein Funktionselement (3) angeordnet ist, das von einem Energieversorgungselement (4) mit elektrischer Energie versorgt wird. Um eine autarke Energieversorgung des Funktionselements zu erreichen, sieht die Erfindung vor, dass das Energieversorgungselement (4) als thermoelektrischer Generator ausgebildet ist, der mit dem Kontaktbereich (2) für heißes Material und mit einem kälteren Bereich der metallurgischen Anlage (1) thermisch verbunden ist.

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