Prestigious Hermes Award for the Bültmann-Trithor Metal Induction Heater

April 20, 2008 (H23). The company Zenergy (Trithor) won today the coveted Hermes Award for the HTS metal induction developed jointly with Bültmann GmbH, a German manufacturer of conventional induction heaters. The award was presented tonight at the opening of Hannover Fair, the worldwide largest industrial Fair. The prize value is 100.000 EUR - one of the biggest industrial awards.

The general idea implemented in this new product is the use of HTS induction coils rather than conventional coils for energy-efficient industrial preheating of non-ferrous metal blocks under processing. Conventional eddy-current heating of such blocks by a coil system surrounding the whole block results in non-uniform radial distribution of temperature resulting is surface overheating. Furthermore, the efficiency of the conventional heating process is only about 40%, as over half of the supplied electrical energy is dissipated in the normal induction coils and the rest in the control electronics.

In the awarded-winning heater, HTS coils of a patented design are used for high-power heating of a short section of the block. The local temperature rise is now practically instantaneous, the surface overheating doesn't occur and the energy efficiency approaches 90%, with the rest being dissipated in the control electronics, integrated cryocoolers, and the mechanical drive necessary for displacing the block linearly between the coils. The system is suitable for processing of diverse metals, such as copper and copper alloys, up to (settable) temperatures approaching 1100 C. Also, difficult materials such as spray-compacted metals can be processed without the danger of cracking. One set of HTS coils is suitable for heating of blocks having a wide range of dimensions.