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Physical Melter Models

Our physical models are based on the similarity parameters according to "Stanék". The experimental assemblies and experimental procedures are constantly under further development. The flow conditions that are caused by conventional heating



as well as electrical boosting ca be displayed in these models.

Flow patterns caused by bubbling and disturbances due to withdrawal and back flows in the throat area can be displayed.

With a special measurement technique and a co-ordinated drive system, electrical power density over the entire melter can be measured at various depths and cross-sections for up to 900 measurement points. These measurement can then be graphically documented.



This procedure allows the determination of optimum electrode and switching arrangements.

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Mathematical Melter Models

The modeling will be done with the calculation of electrical currents of individual electrodes.

In dependence of the electrode voltage, the power supply in the melting area could be determined at different electrode arrangements.

Next, the electrical field distribution and power density is determined. This can be illustrated in different levels or sections by the model.

Representation of a power distribution of 6 side electrodes





Representation of a power distribution of 8 bottom electrodes

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