INTERNATIONAL COPPER STUDY GROUP

NEW REPORT

SMELTING AND HYDROMETALLURGY TREATMENT FOR COPPER SULPHIDE ORES AND CONCENTRATES

This report summarizes the main findings of an ICSG funded research project looking to study five critical subjects related to the plants processing copper sulphides ores and concentrates of different complexity.

- **The report starts with a characterization of copper concentrates available now, followed by the description of copper smelting processes for the treatment of these concentrates. The analysis of the circuits of iron and sulphur contents in relation to CAPEX and OPEX in copper smelters is followed by the analysis of the role of minor elements present in the concentrate including those to be punished by the market and valuable recoverable elements.**

- **A careful review of the actual situation of the global copper smelting industry and its technologies and a review of the actual situation of proposed smelting technologies is included. An update of the existing database of copper smelters, with particular attention to recent copper smelting capacity in China, is summarized and published in detail in the ICSD Directory of Mines and Plants.**

- **The environmental performance of smelter technologies and the expectation for "zero waste process" smelter is discussed in detail, in particular for minor elements, sulphuric acid and slags.**

- **A technical discussion about the merits of different hydrometallurgical processes for the treatment of copper concentrates is followed by a critical analysis of different variables for the selection of a route for the treatment of copper concentrates. In particular for the few technologies have made it to the industrial scale.**

- **A comparison between energy requirements and environmental performance up to cathode production for the hydrometallurgical route for processing high sulphide copper concentrates is discussed. OPEX and CAPEX of the hydrometallurgical route are used to compare economic results versus smelting complex concentrates.**

In summary the findings of this new ICSG research project is a must read for anyone interested in the future of the plants processing copper concentrates, and in particular for governments and industry involved in the decisions that will shape the copper industry supply side in 2020-2030.

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International Copper Study Group Order Form

Prices are quoted in Euros. For US dollars payments contact ICSG (see below)

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Smelting and Hydrometallurgy Treatment for Copper Sulphide Ores and Concentrates	**€ 500**	**€ 1,000**

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