



Cycle de séminaires du LNCMI-T 2013-2014

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en salle de séminaires du LNCMI-T

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Development of copper-silver materials at AGH

During the seminar, the results of experimental researches on the influence of heat treatment and plastic working on evolution of microstructure and development of very high strength and electrical properties of CuAg5 and CuAg15 alloys will be shown. These researches are conducted in last few years by Non-Ferrous Metal Faculty at AGH University of Science and Technology in Krakow. The idea of integrated technologies including a process of continuous melting and casting of rods and the process of drawing them to the wires using pre- and interoperation of heat treatment in order to improve the mechanical and electrical properties of products will be presented.

The research showed that optimization of process parameters allowed to obtain Cu-Ag wires and micro-wires with a specific microstructure and tensile strength of 1000 ÷ 1500 MPa at the simultaneous high electrical conductivity of 66 ÷ 85 % in IACS scale.

During the lecture, also results of research on the development of the original idea of using the high-strength and highly conductive CuAg5 alloy wires for the construction of a high-temperature and low energy transmission loss conductors for high voltage power overhead lines will be presented.

The second part of the seminar, by Andrew Mamala, will address the main ideas for a semi-industrial / industrial manufacturing technology of the high strength and high conductivity Cu-Ag alloys for high field magnet application.