FACTORS INFLUENCING CHARACTERISTICS OF POWDER SAMPLE PREPARED FOR X–RAY EMISSION SPECTROMETRY

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To obtain satisfactory sample melting i.e. a positive result of the JIIS test it is necessary to determine conditions glass disk preparation for each type of sample as pre characteristics of glass disk e.g. particle size, homogeneity of the sample – flux mixture, composition of the mixture for melting, melting temperature and time as well the temperature regime during the melting procedure were examined for samples of iron ores sinters, mixture for sinters and blast furnace slags. The samples and subsamples, in particular phases of the procedure of glass disk preparation were studied by x–ray diffraction and electron probe microanalysis. A Debye Scherr camera PW 1024 Philips and a electron – probe microanalyses JOEL JXA 50A were used.

A conclusion about the quality of the procedure of glass disk preparation can be drawn from the presence or absence of the lines of flux mixture components in Debye Scherrer photographs or from distribution of analyte on the x–ray image.

To achieve a satisfactory glass disk quality is necessary to establish uniformity of particle size in the mixture for melting, to reach high homogeneity of the sample – flux mixture, to define optimum mass participation of each component in the mixture for melting and define optimum time, temperature and regime of melting.

In these conditions are not fulfilled, non–transparence segreation of unreached components on the surface as well as breaking and husking on the edges of glass disk will appear. All results were analyzed mathematically.