ABSTRACT

Application of modern methods of X-ray fluorescence spectrometry in the analysis of the metallurgical materials

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First part of the presentation is concerned with the summary of contemporary used analytical methods and technical possibilities of instruments in analyses of materials from metallurgical processing. Currently used methods of wet-way chemistry are replaced with more effective spectrometric analytical methods in most laboratories. Due to large variability of the process controlling samples that are supplied by the Metallurgical and Chemical laboratories is necessary creating techniques for preparation individual materials for analyses and reduce the analyzing time as well. For correct decision, what sample preparation technique will be used and what spectrometric or combination of spectrometric and classical chemical methods may be used, is necessary to know the history of sampling, and pre-preparations made by submitter of the analysis. On the basis of the theoretical and practical knowledge, the practical techniques for preparation and analyses of some samples from metallurgical production were suggested. Laboratory works were performed in ArcelorMittal Ostrava Corp. and elaborated for the needs of sample analyses from the blast furnace and steel works productions.

Second part of the presentation is concerned with practical results of the analyses of particular materials applying suggested sample preparation techniques and X-ray spectrometric methods utilizing calibration curve evaluation method and **UniQuant 5**, standardless program for X-ray spectrometry. Records were discussed and techniques were applied analyzing samples from the metallurgical production in Spectrometric laboratory.