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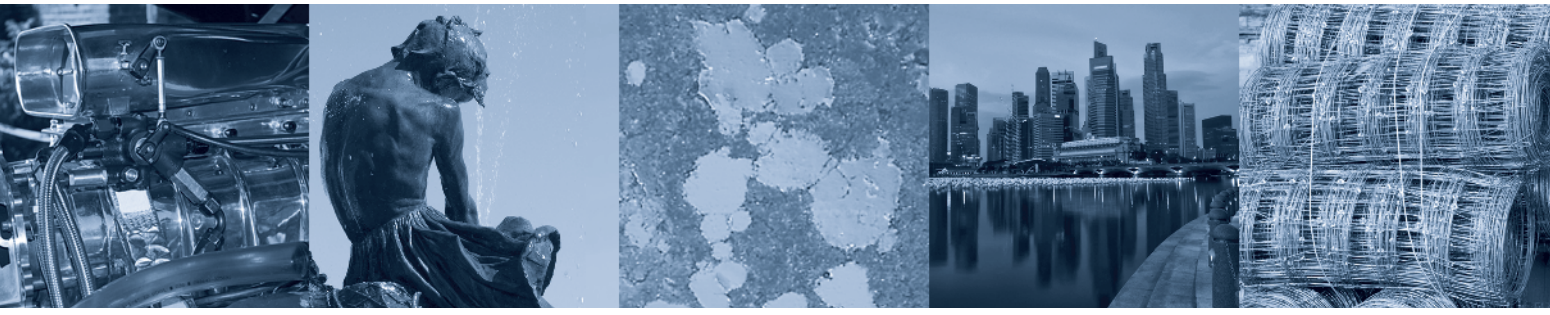

Editor-in-Chief Prof. Leszek A. Dobrzański

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by the World Academy of Materials
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Professor
Leszek A. Dobrzanski M Dr hc
Editor-in-Chief of the AMSE
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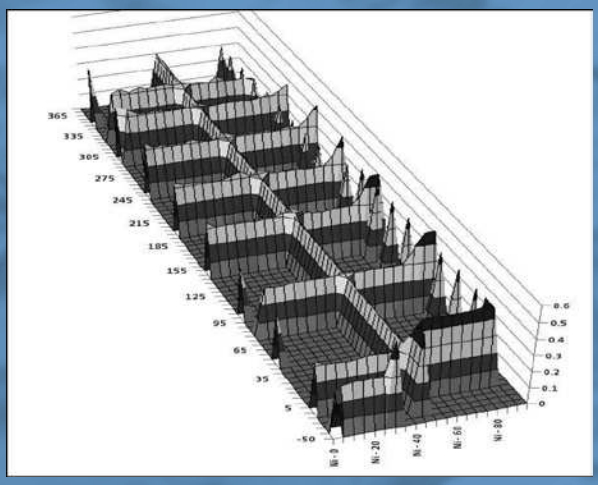
Dear Readers,
Handing over to P.T. Readers the next volume of Archives of Materials Science and Engineering at the same time I would like to inform that we publish in it as usual a few next scientific papers. Encouraging P.T. Authors to submit papers for the publication, today I recommend reading these research papers. I hope that the reading of this issue will bring you satisfaction.



The paper entitled "Evaluation of chemical heterogeneity of a 90-ton forging ingot" by P. Machovčák, A. Opler, Z. Carbol, A. Trefil, K. Merta, J. Zaoral, M. Tkadlečková and K. Michalek on a page 22 describes performance of the experimental 90-ton forging ingot casting, the way of cutting, the methodology of chemical analysis and the results of that investigation. The experimental ingot 8K91SF weighing almost 90 tons was cast due to the performance of a detailed analysis of the current state of casting and solidification. The ingot was cut and macrostructure and chemical heterogeneity of the ingot was evaluated in details. The standard method used in metallurgical analytics – analyses using optical emission spectrometers – was not applicable due to the large number of required analyzes. Thus, the mobile optical spectrometer SPECRTOTEST was used. Sulfur prints and fluid penetration tests were performed due to detect macroscopic distribution of sulfur and to locate surface-breaking defects. The gained knowledge is used to specify the setting of boundary conditions of the numerical simulations, which should help to optimize the production technology of casting heavy forging ingots and minimize the level of segregation in ingots. A current level of segregations of selected elements in real 90-ton steel ingot was detected. Also mutual mixing of two heats needed for the production of this ingot was verified. New knowledge concerning mutual mixing of two heats needed for bottom casting of heavy forging ingot are presented in this paper. Distribution of segregation in so heavy ingot was detected. Results are the base for further investigations in macro-segregations and the improvement of the accuracy of results of numerical simulations.