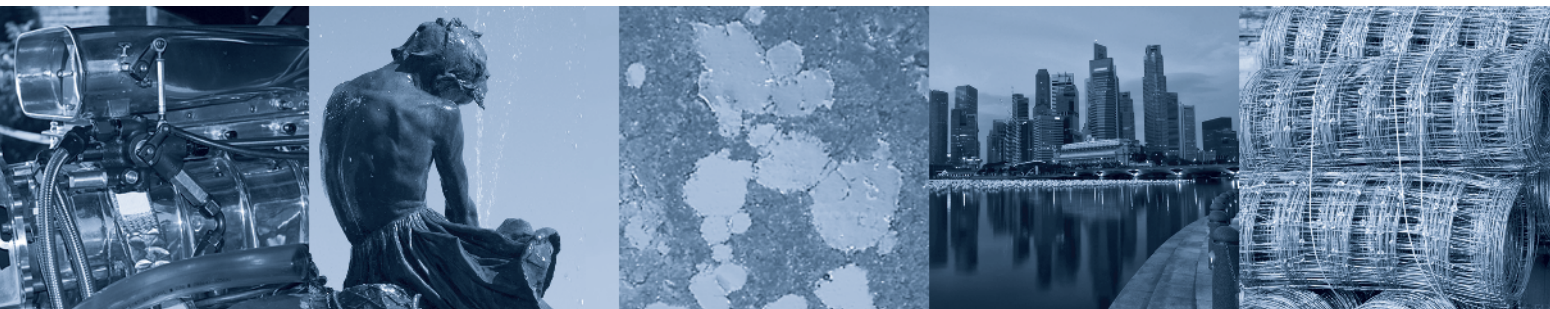




Volume 58
Issue 1
November 2012
Pages 1-48

Published since 1978
formerly as Archives of Materials Science
or Archiwum Nauki o Materiałach (in Polish)

Archives of Materials Science and Engineering



Editor-in-Chief Prof. Leszek A. Dobrzański

International Scientific Journal published monthly
by the World Academy of Materials
and Manufacturing Engineering

<http://www.archivesmse.org>



PUBLISHED SINCE 1978 – formerly as Archives of Materials Science or Archiwum Nauki o Materiałach (in Polish)

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Institute of Engineering Materials and Biomaterials of Silesian University of Technology, Gliwice, Poland

Financial support

In 2012 the publication of the Journal is financially supported by the Ministry of Science and Higher Education in Poland.

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Journal Registration

The Journal is registered by the 1st Civil Department of the District Court in Gliwice, Poland at number 278.

Publisher



INTERNATIONAL
OCSCO
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International OCSCO World Press
ul. S. Konarskiego 18a/366,
44-100 Gliwice, Poland

e-mail: info@archivesmse.org

Bank account: Stowarzyszenie Komputerowej Nauki o Materiałach i Inżynierii Powierzchni

Bank name: ING Bank Śląski

Bank address: ul. Zwycięstwa 28, 44-100 Gliwice, Poland

Account number/IBAN CODE: PL76105012981000002300809767

Swift code: INGBPLPW

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Printed in Poland.

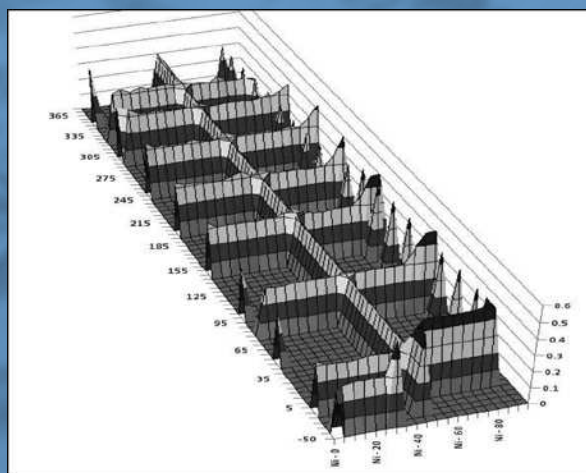
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Handing over to P.T. Readers the next volume of Archives of Materials Science and Engineering at the same time I would like to inform that we publish in it as usual a few next scientific papers. Encouraging P.T. Authors to submit papers for the publication, 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 analyses. 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.