Volume 57
Issue 2
October 2012
Pages 49-96

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

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Patronage

World Academy of Materials and Manufacturing Engineering

Association of Computational Materials Science and Surface Engineering

Polish Academy of Sciences, Committee of Materials Science, Section of Metallic Materials

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

Financial support

The efforts to achieve the financial support of the Journal in 2012 from the Ministry of Science and Higher Education in Poland have begun.

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The procedure of its registration in the databases of Compandex, CiteSeer, GetCited, Web of science, Engineering Village, Public Knowledge Project, Edith Cowan University's Institutional Repository, Journals Online and Inspec has begun.

Journal Registration

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

Publisher

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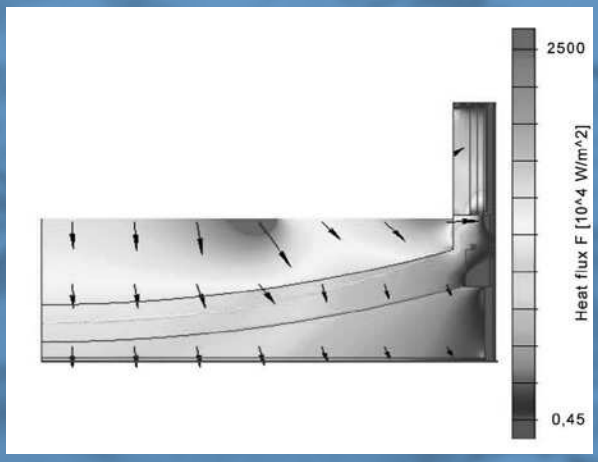
Dear Readers,
Handing over to P.T. Readers the next volume of Archives of Materials Science and Engineering at the same time I would like to inform that we publish in it as usual a few next scientific papers. Encouraging P.T. Authors to submit papers for the publication, today I recommend reading these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



The paper written by W. Soszyński and A. Studnicka on "An attempt to specify the degradation of the electric furnace hearth for the determination of future operating properties" on a page 88 informs about the analysis of the potential use of new materials in the electric furnace hearth lining and the indication of operating effects for the furnace resulting from their use. The impact of the application of new hearth lining materials on total power needed to receive through an air cooling system of the furnace hearth was also analyzed. As a result of carried out calculations and analysis the amounts of heat flux transferred, in successive periods of operation, through hearth working layer to cooling installations were acquired. Basing on simulations and calculations, for the above mentioned heat flux, temperatures were calculated on the bottom shell of furnace, in the electrodes axes for different periods of furnace operation. To achieve a decrease in thermal load of hearth it is advisable to reduce thickness of filling material near the vertical wall of furnace and filling the acquired space with new graphite blocks applied to the last layer of hearth. Those information were crucial and had an actual impact on a final design of furnace lining. Carried out analysis have crucial meaning for furnace user, as they allow to predict the probable operation of furnace with new lining materials over the years. This will also make it easier to control the state of lining materials wear and will allow for a better process control.