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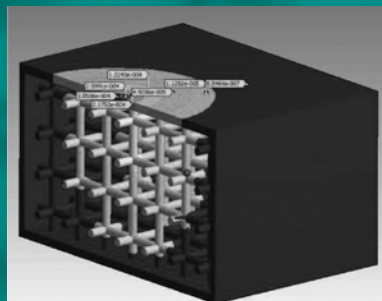
Professor

Leszek A. Dobrzanski M Dr hc
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Dear Readers,

The next issue of Archives of Materials Science and Engineering is ready to hand over to PT Readers. The especially recommended paper on skeleton structures is one of several ones that we present in this issue. This issue, however, is special. We finish the fifth year of the publication of our journal in the present editing and graphic form. We thank PT Authors, PT Readers, PT Reviewers and all PT Staff for sticking faithfully to our title. The number of papers published in that period is ca. 600 and the number of citations includes a list of several thousand items. This proves that the title is needed, well serves the scientific community and have helped many people to shape their own academic career. Undoubtedly, the availability of full texts of all papers in the form of open access in the Internet supports the dissemination. At the beginning of the New Year 2012 we wish all those who are friendly to our activity Happy New Year, happiness and success both in the scientific activity, as well as in a private life, and above all good health and cheerfulness, because it certainly helps.



Authors: M. Cholewa, T. Szuter, M. Dziuba in the paper entitled "Basic properties of 3D cast skeleton structures" on a page 101 present recent achievements in field of skeleton structures. The aim of this work is to show results of searching for mechanically and technologically advantageous micro- and macrostructures. Methods of microstructure controlling were described. Most important parameters of the manufacturing process were identified. Three dimensional cast skeleton structures with internal topology of octahedron confirmed their usefulness as elements used for energy dissipation. Obtaining the homogenous microstructure in the whole volume of complicated shape castings can be achieved. Casting methods used to manufacture materials such as described skeleton castings confirmed their usefulness. Not well known and used yet rheological properties of liquid metals allow obtaining shape complicated structures near to metallic foams but structured arranged. It was found out that the octahedron shape of internal cell causes best stress distribution and that the skeleton castings are a good alternative for cellular materials such as metal foams, lattice structures and sandwich panels. Their structured arranged topology allows precise design of properties. Technological parameters of the skeleton castings manufacturing process were developed. Without use of advanced techniques there is a possibility to manufacture cheap skeleton structures in a typical foundry. With a use of advanced technology like 3D printing there are almost unlimited possibilities of the skeleton castings internal topologies.