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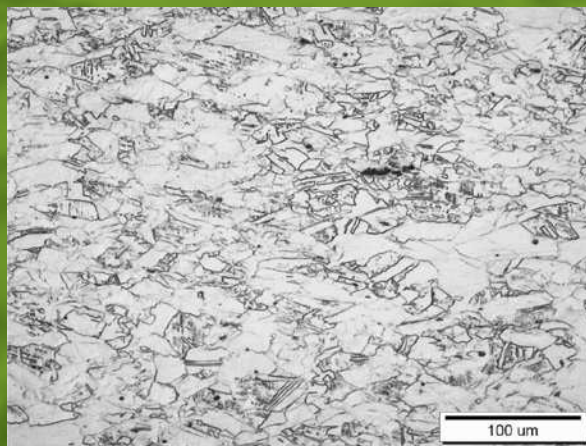
Professor

Leszek A. Dobrzański M Dr hc
Editor-in-Chief of the AMSE
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Dear Readers,

The next issue of Archives of Materials Science and Engineering is handed over to PT Readers. In a few days time we will enter the New Year 2013. It will be the 9th year of activity of the World Academy of Materials and Manufacturing Engineering and at the same time the 9th year of issuing the Journal of Achievements in Materials and Manufacturing Engineering, also the 8th year of issuing Archives of Materials Science and Engineering. As every new year, this one also brings new hopes and chances. And because of that we are sending our best wishes to individuals as well as to various institutions. We are also receiving more and more seasonal wishes including new year wishes, for which I hereby give my most sincere thanks. I wish the eminent Fellows of WAMME Academy, members of International Editorial Board and Deputies Editor-in-Chief, co-workers and sympathizers of the Journal, but most of all PT Authors and PT Readers all the best, success and good wealth in upcoming New Year of 2013. I am pleased to hand over to PT Readers the next issue of Archives of Materials Science and Engineering with the hope that the reading of papers contained in it will be interesting and invite PT Authors to publish their works in next issues. I do recommend a scientific paper presented below.



In the paper "Microstructure evolution after thermo-mechanical treatment of X11MnSiAl25-1-3 TWIP-type steel" written by A.D. Dobrzańska-Danikiewicz, W. Borek, J. Mazurkiewicz, A. Jagiełło (a page 14) the results of research of the effect of thermal and thermoplastic working on the structure of high-manganese austenitic TWIP steels are shown. Plastometric tests were performed with DSI (Dynamic System Inc.) Gleeble 3800 instrumentation being the equipment of the Scientific and Didactic Laboratory of Nanotechnology and Materials Technologies of the Institute of Engineering Materials and Biomaterials. Changes in the microstructure after individual stages of hot plastic deformation were determined on the basis of detailed microstructure tests with the light microscope and the scanning electron microscope. The newly developed high manganese austenitic X11MnSiAl25-1-3 TWIP type steel has, in the initial condition, an austenitic structure with multiple annealing twins. By applying the hot pressing of axisymmetric specimens in the Gleeble 3800 simulator with the deformation of 4x0.23 in four stages, dynamic recovery within the entire range of deformation and temperature is the process controlling the consequences of strain hardening. Steel supersaturated in water directly after deformation at temperature is characterised by a smaller size of austenite grains of about 20-25 μm. Further refinement of the microstructure can be obtained by isothermal holding of the specimens in a finishing hot-working temperature for 30 s. Repeated recrystallization and corresponding grain refinement causes that the thermo-mechanically processed steel is characterised by uniform structure.