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Editor-in-Chief Prof. Leszek A. Dobrzański

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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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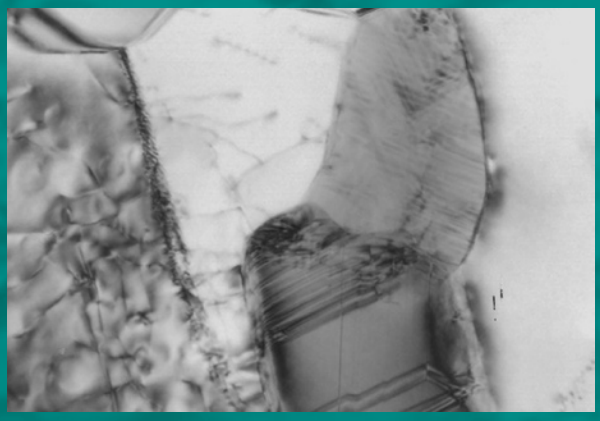
I am pleased to hand over to PT Readers the next issue of Archives of Materials Science and Engineering with the hope that the reading of papers contained in it will be interesting and invite PT authors to publish their works in next issues. I do recommend a scientific paper presented below.



An author: K.J. Ducki in the paper entitled "Effect of heat treatment on the structure and creep resistance of austenitic Fe–Ni alloy" on a page 33 discusses the problem of determining the dependence between the initial heat treatment of an austenitic Fe–Ni alloy and its structure, and creep resistance. Specimens of Fe–Ni alloy were subjected to tests after two variants of heat treatment, i.e. solution heat treatment followed by typical single-stage ageing, and solution heat treatment followed by novel two-stage ageing. For the investigated Fe–Ni alloy after solution heat treatment in the conditions: 980°C/2h/water, two variants of specimen ageing were applied for a comparison: single-stage ageing (715°C/16h/air) and two-stage ageing (720°C/8h + cooling in the furnace up to the temperature of 650°C + 650°C/8h/air). The thermally treated specimens were then subjected to a static tensile test at room and elevated temperatures, and to a creep test in a temperature range of 650÷750°C, at stresses from 70 to 340 MPa. The study shows a significant effect of the applied ageing variants on mechanical properties and creep resistance of the tested austenitic Fe–Ni alloy. It was found out that both, at the room and elevated temperatures, the specimens of Fe–Ni alloy after 2-stage ageing were distinguished by higher strength properties (Y.S, T.S) with a little lower plastic properties (EL., R.A). As regards extrapolated results of creep tests, it was found out that at a longer exposure time of ca. 10,000 h, specimens after single-stage ageing were characterized with higher creep resistance. Lower creep resistance of the Fe–Ni alloy after two-stage ageing can be explained by increased brittleness of the material in boundary areas. The obtained test results may be used to optimise heat treatment and forecast the operation conditions of products made out of Fe–Ni alloy at an elevated temperature.