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Materials Research Solid State Physics and Engineering

The Strength-Ductility Paradox

David J. Fisher

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The book reviews the strength-ductility paradox in a wide range of materials, and the range of mechanisms involved. The book references 119 original resources with their direct web links for indepth reading.

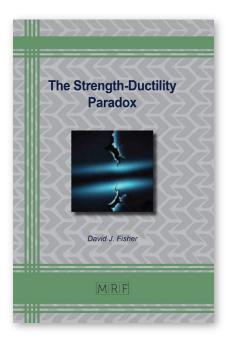
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Summary:

The strength-ductility paradox originally referred to the fact that the plasticity of titanium is improved when subjected to high-pressure torsion. This is also known as the SPD-paradox, where SPD is the initialism of severe plastic deformation. Today, we know that short-term annealing of the deformed material increases the strength and ductility simultaneously. The same phenomenon is also observed in other pure metals, in alloys and in metal-matrix composites. The book reviews the strength-ductility paradox in a wide range of materials, and the range of mechanisms involved. The book references 119 original resources with their direct web links for in-depth reading.



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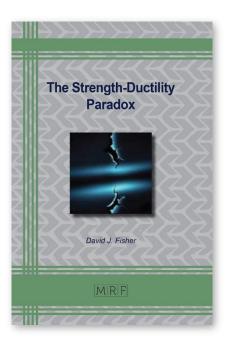
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