crystals

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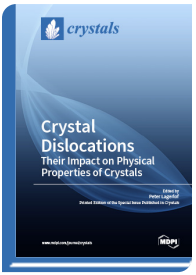
*Special Issue Reprint*

# Crystal Dislocations: Their Impact on Physical Properties of Crystals

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Peter Lagerlof

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The proposed existence of the edge and screw dislocation in the 1930s, and the subsequent work showing that dislocation theory could explain the plastic deformation of crystals, represent an important step in developing our understanding of materials into a science. The continued work involved with characterization of dislocations and linking them to a variety of physical properties in both single and poly crystals have made enormous progress over the past 50 years. It is rare to find a technical application involving a material with any crystal structure that is not impacted by dislocations; mechanical properties, massive phase transformations, interphases, crystal growth, electronic properties, the list goes on. In many systems the properties is controlled by the formation of partial dislocations separated by a stacking fault; for example plastic deformation via deformation twinning. And finally, giant strides have been made in characterization and modeling of systems containing dislocations.

The Special Issue on “Crystal Dislocations” is intended to provide a unique international forum aimed at covering a broad range of results involving dislocations and their importance on crystal properties and crystal growth. Scientists working in a wide range of disciplines are invited to contribute to this cause.

MDPI agerlof, Associate Professor of Ceramics

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