

Poster Presentation

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Implementing graphic outputs for the Material Properties Open Database (MPOD)

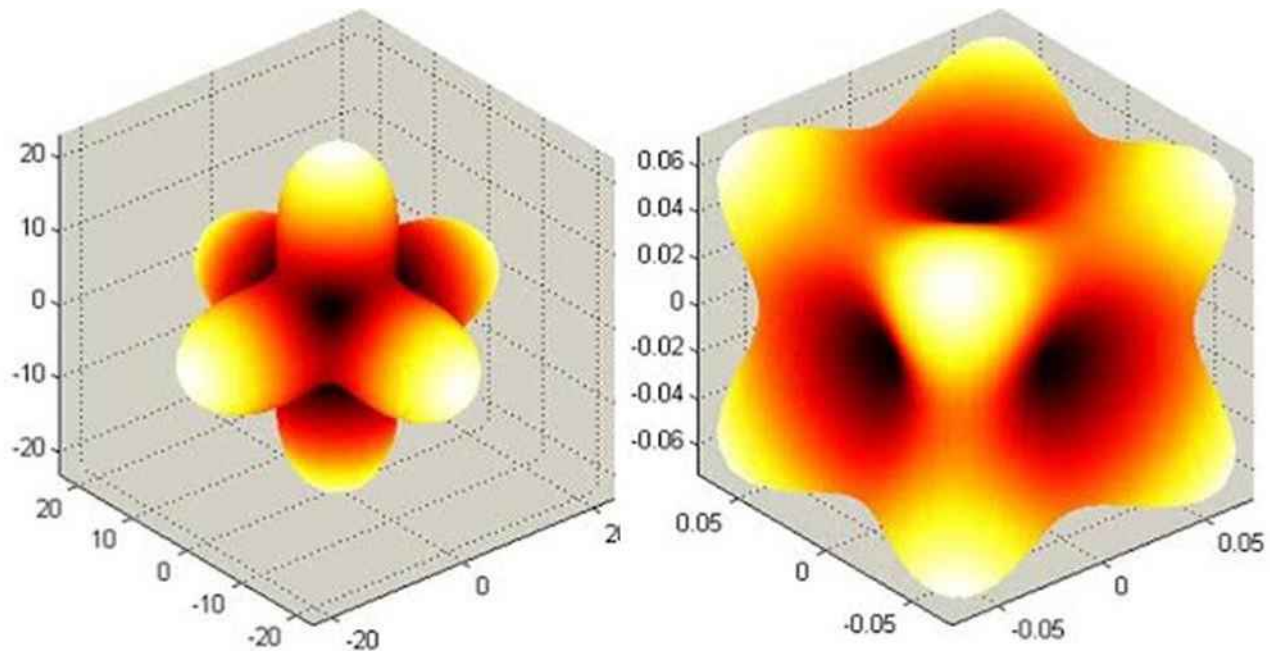
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The tensor nature of single- and polycrystalline materials' physical properties highlights both the diversity of possible technological applications and the difficulties of assimilation for those new to the subject. The Material Properties Open Database (MPOD) [1] is a useful tool that provides access to a wide spectrum of properties tensors for an extensive selection of materials. In the present contribution an extension of the MPOD system is reported. The introduced innovation is the output, in the form of a graphical representation, of registered second, third and fourth rank tensors. The objective, as an educational project, is to provide the crystallographic community a friendly means to help the intuitive understanding of crystalline anisotropy. The given graphical output is the so-called longitudinal surface representation [2]. The accompanying figure shows an example of the MPOD graphical output. Shown surfaces represent the compliance tensor and its inverse (Young's modulus) longitudinal surfaces for a silver single-crystal. MPOD's new version may be accessed by the original website <http://www.materialproperties.org/> and also by its Mexican mirror <http://mpod.cimav.edu.mx>. The MPOD websites continue their development. The international MPOD group systematically adds new published data. Modeling and representing textured polycrystals' properties is on target [3].

[1] G. Pepponi, S. Gražulis, D. Chateigner, *Nuclear Instruments and Methods in Physics Research B*, 2012, 284, 10–14, [2] R. E. Newnham, *Properties of Materials*, 2012, 5, 30-33, [3] L. E. Fuentes-Cobas, A. Muñoz-Romero, M. E. Montero-Cabrera et al, *Materials*, 2013, 6, 4967-4984.



Elastic compliance $s(\mathbf{h})$

Young modulus $1/s(\mathbf{h})$

Elastic properties of a silver single-crystal

Keywords: Properties geometric representation