A gradient nanostructure generated in pure copper by platen friction sliding deformation - DTU Orbit (09/11/2017)

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A modified friction sliding process with a large applied normal load has been used to develop a gradient nano structure in Cu using only a short processing time. A quantitative characterization of the variation in microstructure and strength has been carried out by combined use of electron backscatter diffraction and hardness measurements, and the data used to estimate the effective strain profile resulting from the processing treatment The affected deformation volume extends to a large depth of more than 1 mm, with a top surface hardness of 228 GPa, corresponding to a four-fold increase compared to the initial undeformed material. (C) 2016 Elsevier Ltd. All rights reserved.

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