

Texture Optimization by Shear Rolling and Annealing

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Technology Summary

A novel thermomechanical processing technique has been developed for post processing of Fe-Si wire to develop an optimum preferred orientation in the wire so that it can be used to construct a wire based magnetic component for a novel transformer design. The focus of the invention is to obtain the deformation and annealing conditions under which $\langle 100 \rangle$ fiber, the desirable wire texture, could be achieved. For this purpose a microstructural deformation modeling technique based on a crystal plasticity approach was used with unpredictably favorable results.

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