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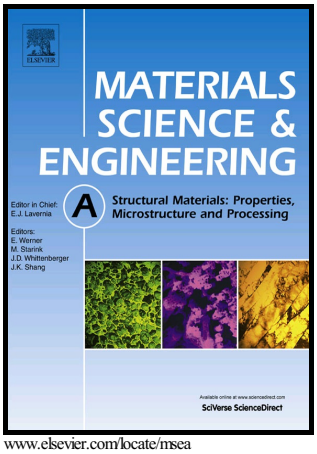

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Role of hard martensite phase prior to cold-rolling on microstructure evolution after annealing in ferritic stainless steel

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Abstract

To improve the surface quality of 16mass%Cr ferritic stainless steel sheets processed by cold-rolling and subsequent annealing, the role of the hard martensite phase, in particular, the hardness ratio k between martensite and ferrite prior to cold-rolling on microstructure evolution was investigated by varying the k value through tempering specimens at different temperatures after intercritical annealing. In the specimen with the high ratio k (k>2.0), the heterogeneous deformation in ferrite around the hard martensite becomes prominent and the areas with the high KAM value are locally limited with less development of cold-rolling texture. The