



Invited Talk, Monday, May 6, 5:10 p.m. - 5:50 p.m., ICAMS² session: **M3**

Computational process design of high value-added {100} textured steel sheet

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A phase field simulation technique has been performed to find an optimum process for the development of high value-added {100} textured steel sheets. The work is based on the idea that it might be possible to alter the relative size of surface energy between (110) and (100) surfaces of bcc Fe utilizing surface segregation of impurity atoms and to obtain a {100} texture through a tertiary recrystallization of a steel sheet. The possibility of altering the relative size of (110) and (100) surface energy is confirmed by an atomistic simulation. A phase field grain growth simulation is used to find an efficient way for the formation of {100} texture. Based on theoretical predictions, an experimental attempt is made to produce a {100} textured steel sheet and such a sheet is indeed produced.

