



## Through-process model for the microstructure of dual-phase steel

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Shaker Verlag Aug 2011, 2011. Taschenbuch. Book Condition: Neu. 208x146x12 mm. Neuware - Due to the fact that small variations in chemical composition and industrial process parameters are known to have a strong influence on strength and formability of dual-phase steels, precise control of the microstructure evolution during full processing route is required for achievement of defined mechanical properties. Nowadays it is reasonable to apply physical based numerical investigation approaches, which has reached a level where a property-driven improvement of the microstructure becomes possible. The current work is focused on a through-process model for the microstructure evolution during processing of dual-phase steels from cold-rolled strips, which allows coupling to available RVE-FEM approach for the prediction of mechanical properties within a continuum mechanical framework. In order to understand the relevant features of the transformations occurring during intercritical annealing, all metallurgical processes on the microstructural scale, i.e. recrystallisation, austenite formation and decomposition were separately investigated before being combined into one integrative process model. 2D- and 3D-modelling of the microstructure evolution is realised by means of Multi-Component-Multi-Phase-Field method using the commercial software MICRESS®. It was shown that both 2D- and 3D-Phase-Field approaches enable the simulation of the microstructure evolution during whole processing of...

### Reviews

*The publication is straightforward in study safer to recognize. It is written in straightforward words and never hard to understand. It has been printed in an extremely straightforward way and it is just after I finished reading this book through which basically modified me, affect the way I think.*

-- **Percy Bernhard**

*Very useful to any or all group of folks. It really is really interesting through reading through period of time. Once you begin to read the book, it is extremely difficult to leave it before concluding.*

-- **Mrs. Dorris Wintheiser**