

Bainite formation in the presence of martensite

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Propositions

accompanying the dissertation

Bainite formation in the presence of martensite

by

Daniel dos Santos Avila

1. The effect of prior austenite grain size and prior martensite on bainite formation kinetics can be explained in terms of the density of potential nucleation sites and activation energies for nucleation (*This proposition pertains to this dissertation*).
2. Alloying with boron should be standard practice in steels containing bainite accelerated by martensite (*This proposition pertains to this dissertation*).
3. There is no single intrinsic feature that can always be used to distinguish Widmanstätten ferrite, bainite, and isothermal martensite.
4. Bainite is best described as an invention rather than a discovery.
5. There is no aspect of bainite formation that cannot be explained by a displacive-diffusional theory with possible supersaturation of carbon.
6. If a research project on steel is funded by public resources, everyone in society pays for it. If the project is instead funded by a steelmaking company, everyone in society still pays for it.
7. Technology alone cannot solve the climate crisis.
8. Climate change is a choice based on a colonial logic.
9. Error bars have error bars.
10. Finding housing in Delft is more competitive than finding a PhD position at TU Delft.

These propositions are regarded as opposable and defensible, and have been approved as such by the promotors, Prof. dr. M.J. Santofimia Navarro and Dr. ir. S.E Offerman.