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Alpha-Gamma Transformations in Iron Alloys-- Calibration of Pressure by Duplex Differential Thermal Conductivity Analysis

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By differential thermal conductivity analysis one may consecutively observe with rising temperature certain transitions in two materials. By considering one as a standard whose pressure-temperature curve for the transition is known, one may infer the pressure within the cell, and hence one may develop a pressure-temperature curve for the transition in the second material. This technique is applied to the alpha - gamma transitions in iron, as reference standard, and in binary alloys of iron with Ni, Cr, Mn, Al, Co and C, as unknowns, at pressures up to 70 kb.

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