Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supplementary Information

MgB_2 for MRI application: Dual sintering induced performance variation in *in situ* and IMD processed MgB_2 conductors

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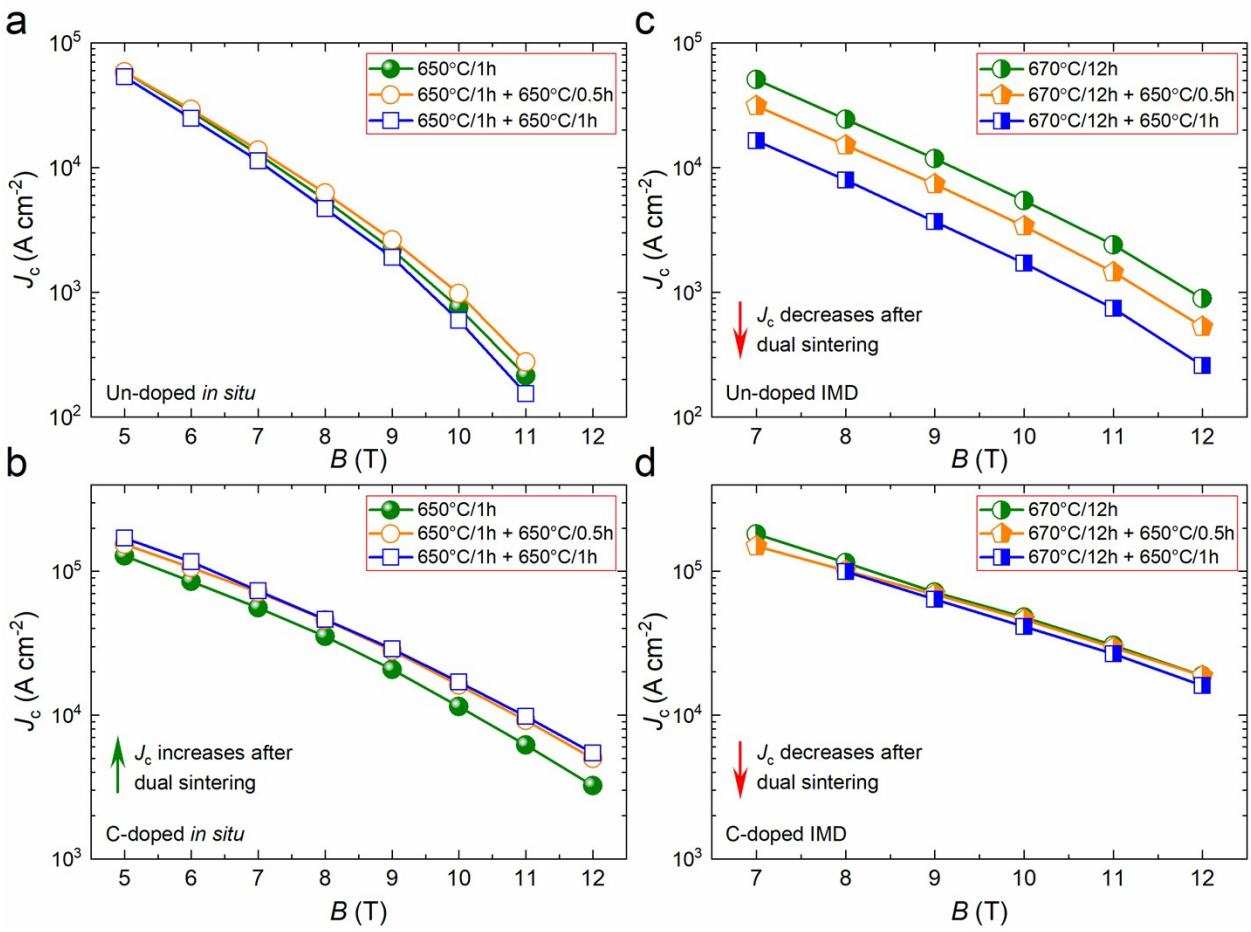

Fig. S1 J_c versus B characteristics of the (a) un-doped *in situ*, (b) C-doped *in situ*, (c) un-doped IMD, and (d) C-doped IMD MgB_2 wires sintered in different conditions. The distance between voltage taps on the wires was 0.5 cm (criterion: 1 μV cm^{-1}). All the measurements were carried out at 4.2 K. The average MgB_2 layer area of the three C-doped IMD wires was used for the J_c calculation of each wire.

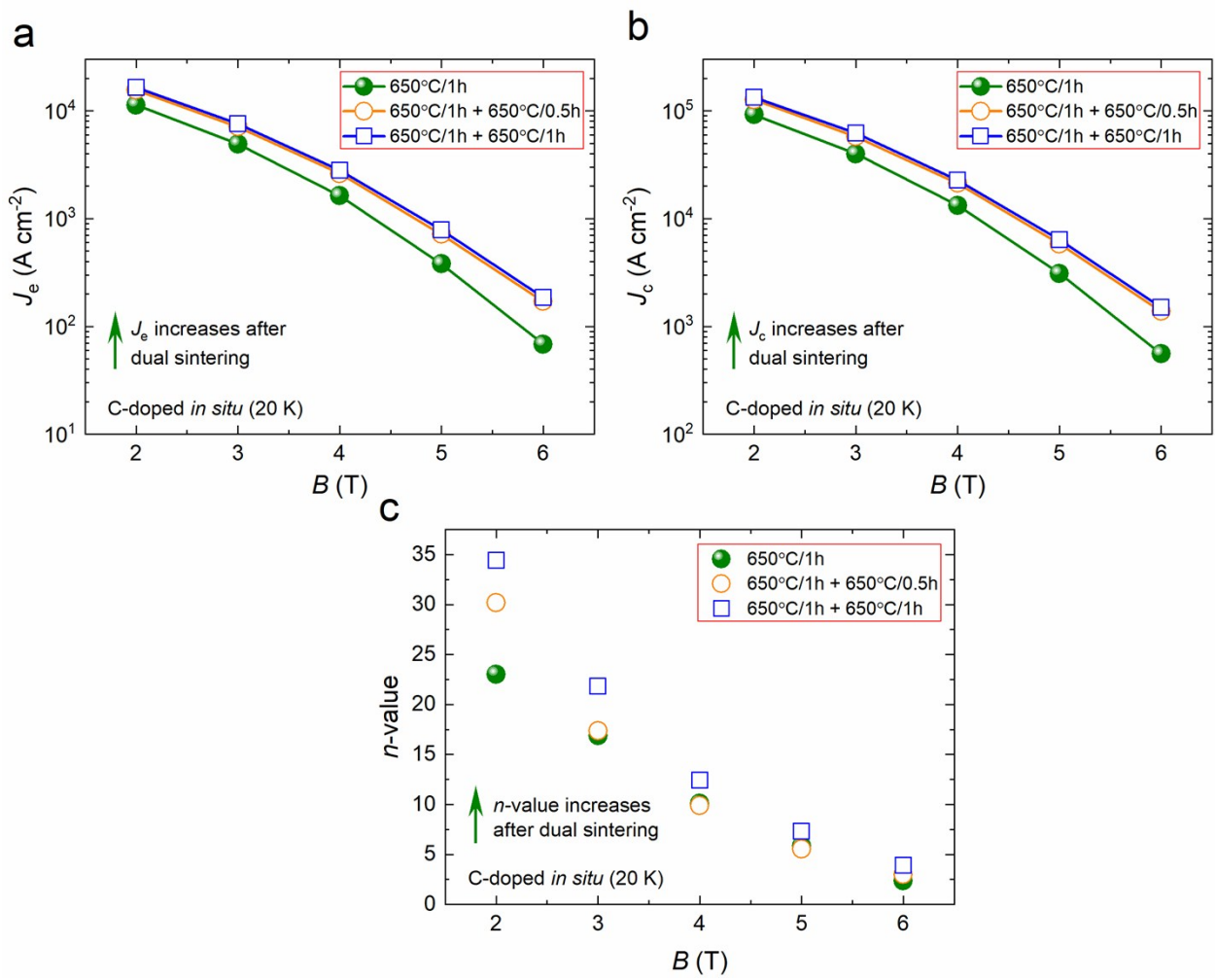

Fig. S2 (a) J_e versus B, (b) J_c versus B, and (c) n-value versus B characteristics at 20 K of the C-doped *in situ* MgB_2 wires sintered in different conditions. The distance between voltage taps on the wires was 0.5 cm (criterion: 1 μV cm^{-1}). The n-values were estimated by linear fitting of log V vs. *log I* curve between $1V_c$ to $10V_c$ in different magnetic fields at 20 K.

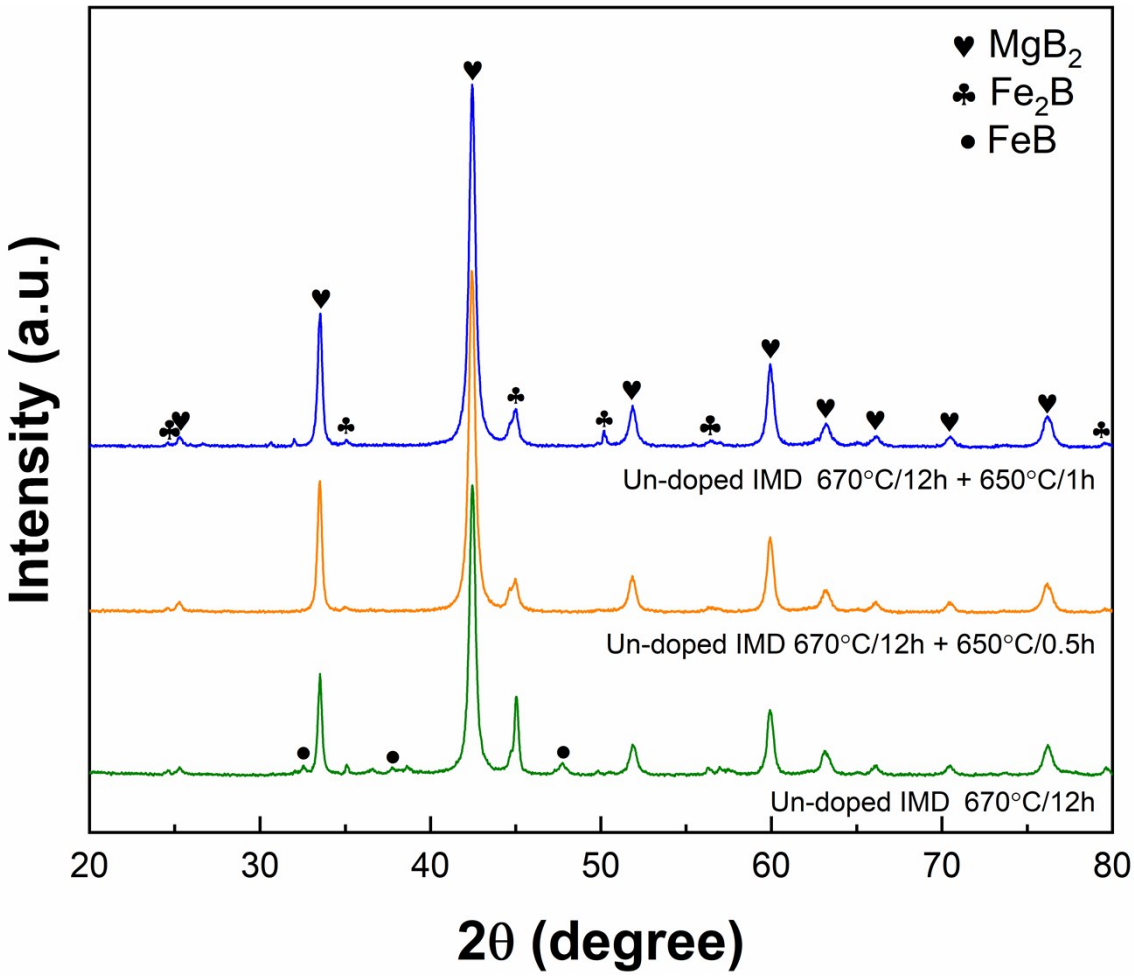

Fig. S3 XRD patterns of the un-doped IMD MgB_2 wires sintered at different temperatures.