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**Superconducting $Mg(B_{1-x}C_x)_2$ with Titanium Additions** D.K. FINNEMORE, R.H.T. WILKE, S.L. BUD'KO, P.C. CANFIELD, Ames Laboratory, Iowa State University and Department of Physics and Astronomy, Iowa State University, RAYMOND J. SUPLINSKAS, Specialy Materials, Inc., S.T. HANNAHS, National High Magnetic Field Laboratory, Florida State University — We have studied the superconducting properties of $Mg(B_{1-x}C_x)_2$ up to x = 0.021 with and without 0.5% titanium impurities to determine the feasibility of simultaneously enhancing both the upper critical field and critical current density via chemical additions. Carbon substitutes for boron, increasing $H_{c2}$ by increasing scattering within the $\pi$ band. Titanium forms inter and intragranular precipitates of either TiB or $TiB_2$, which enhance flux pinning and $J_c$. The two effects appear additive and result in an increase in $J_c$ and $H_{c2}$ values.

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