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Heat treatment of Textured Powder Bi-2212/Ag Wire[1] FENG LU, KYLE DAMBORSKY, PETER MCINTYRE, Department of Physics and Astronomy, Texas A&M University, ACCELERATOR RESEARCH LABORATORY TEAM — Bi-2212/Ag conductors are being considered for future very high field magnet technology, beyond the 20 T limit of Nb3Sn magnet technology. long-length Bi-2212/Ag conductor and coils still yield engineering current density (Je) much less than expected. The main current limit mechanism is residual bubbles in fully-processed wires due to porosity of the as-drawn wire and porosity agglomeration during the melting process. We have demonstrated that the high core density of textured powder (TPC) filaments minimizes the porosity of as-drawn wires. We are investigating three heat treatments to achieve high Je by reducing the bubble size and density in fully processed conductors: Over-Pressure Sintering (OPS), Over-Pressure Melting (OPM), and Current Control Melting (CCM).

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