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Preparation of a dense, vertically-aligned carbon nanotube forest from colloidal iron nanoparticles DAVID HUTCHISON, RICHARD VANFLEET, ROBERT DAVIS, BRIAN F. WOODFIELD, JULIANA BOERIO-GOATES, Brigham Young University — We report growth of vertically-aligned carbon nanotube (VACNT) forests from 10nm iron oxide nanoparticles in colloid form instead of the usual sputtering technique. The nanoparticles were suspended in water by sonication and dried onto a 20nm layer of alumina on silicon dioxide. VACNTs were grown by chemical vapor deposition using ethylene, hydrogen, and argon. Dense forests up to heights of 0.5 mm with uniform height have been grown. These structures have been shown by other groups to be useful as field emitters.

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