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Growth of Periodic Arrays of Vertically Aligned Carbon Nanotube on Glass TRILOCHAN PAUDEL, JAKUB RYBCZYNSKI, ZHIFENG REN, BOSTON COLLEGE TEAM — Periodic arrays of vertically aligned carbon nanotubes on glass have been grown by dc plasma enhanced chemical vapor deposition on patterned Nickel dots prepared by polystyrene nanosphere lithography. A thin buffer layer of Titanium was first coated on cleaned high temperature C1737 Aluminosilicate glass substrates and then a monolayer of self-assembled polystyrene spheres was deposited on the glass. Through the polystyrene spheres, a hexagonal pattern of triangular Nickel dots was obtained after removing the spheres. The sphere size and Nickel thicknesses consequently determine the diameter and the site density of carbon nanotubes. The successful growth of carbon nanotubes on glass substrates with good periodicity and alignment are crucible to bio-sensor and solar cell applications.

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