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Growth of Pure and Long Silicon Nanowires on Table Salt Support GUANGYONG XIONG, SHUO CHEN, BAOQIN ZENG, WENZHONG WANG, DEZHI WANG, ZHIFENG REN, Boston College, REN'S GROUP TEAM
— Table salt was found to be a very good support for the growth of silicon (Si) nanowires in large quantity by a simple thermal decomposition of diluted silane gas in argon and hydrogen gases at less than 500^{o}C. Hydrogen gold tetrachloride was uniformly mixed into the salt and decomposed into gold nanoparticles at the growth temperature and acted as the catalyst particles to start the growth of Si nanowires. The scanning electron microscope images showed that the as-grown Si nanowires are about 50-100 nm in diameter and up to 200 micrometers long. X-ray diffraction patterns showed that the salt was completely removed by water rinse. The transmission electron microscope studies showed that these Si nanowires are highly crystallized single crystals with an amorphous silicon layer of less than a few nanometers.

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