Experimetal Analysis on Particles Coating process in Inductively Coupled Plasma Reactor

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The morphology and thickness of TiO2 thin films coated on glass beads were measured experimentally to examine the effects of process conditions on particle coating in the rotating cylindrical inductively coupled plasma (ICP) reactor. We can increase the thickness of TiO2 thin films coated on glass beads by increasing deposition time, mass flow rate of TTIP, reactor pressure, or rotation speed of reactor. Increase in the applied power decreases the thickness of thin films on glass beads. When the TiO2 thin films grow faster, their uniformity becomes worse. This study shows that, in the rotating cylindrical ICP reactor, the process conditions should be optimized to coat the high quality thin films on the glass beads uniformly with reasonable deposition rate.