

RADICAL-ACTIVATED CARBON FILM DEPOSITION

ABSTRACT

Crystalline or amorphous carbon films are deposited on a substrate using radical-activated carbon-
5 containing precursors. The carbon-containing precursors include one or more C-C bonds and/or
one or more C-H bonds. Radicals are generated in a remote plasma source located upstream of a
reaction chamber, and carbon-containing precursors are flowed into the reaction chamber
downstream from the remote plasma source. The radicals interact with the C-C bonds and/or C-
H bonds to activate the carbon-containing precursors in an environment adjacent to the substrate.
10 In some implementations, highly conformal amorphous carbon films are deposited by radical-
activated carbon-containing precursors.