CHEMICAL VAPOUR DEPOSITION FROM A RADIATION-SENSITIVE PRECURSOR -
DTU Orbit (01/04/2019)

CHEMICAL VAPOUR DEPOSITION FROM A RADIATION-SENSITIVE PRECURSOR

The present invention relates in one aspect to a method of depositing a thin film on a substrate by chemical vapour
deposition (CVD) from a radiation-sensitive precursor substance. The method comprises the steps of: (i) placing the
substrate in a reaction chamber of a CVD system; (ii) heating the substrate, wherein heating includes the transmission of
electromagnetic heating radiation from a controllable radiative heat source through the reaction chamber towards the
substrate, wherein the radiative heat source is controlled to provide electromagnetic radiation as one or more heating
pulses, each heating pulse followed by an idle period; (iii) during at least one of the idle periods, providing a pressure
pulse of precursor substance inside the reaction chamber by feeding at least one precursor substance to the reaction
chamber so as to establish a reaction partial pressure for thin film deposition from said pre-cursor substance onto the
substrate and subsequently, after a dwell time, removing the precursor substance so as to reduce the partial pressure of
the precursor substance in the reaction chamber to below a threshold; and (iv) repeating steps (ii) and (iii) until a desired
thin film is formed. According to a further aspect, the invention relates to a chemical vapour deposition (CVD) system for
depositing a thin film onto a substrate using precursor substances containing at least one radiation sensitive species.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Nanocarbon
Contributors: Stoot, A. C., Camilli, L.
Publication date: 14 Sep 2017

Publication information
IPC: C23C 16/ 48 A I
Patent number: WO2017153510
Date: 14/09/2017
Priority date: 09/03/2016
Priority number: EP20160159305
Original language: English
Electronic versions:
WO2017153510A1.pdf
Source: espacenet
Source-ID: WO2017153510
Research output: Research › Patent – Annual report year: 2017