

CVD of Laminar Ceramic Composites

Johanna G. M. Becht, Paul J. van der Put and Joop Schoonman, Delft University of Technology, The Netherlands.

Laminar ceramic composites can easily be produced during chemical vapor deposition (CVD) by changing the composition of the reactant gas mixture. Several morphologies can be developed depending on whether the composition is changed instantaneously or gradually. The system TiN/TiB₂ has been selected for detailed study. TiB₂ can be utilized in advanced technologies, but in order to prevent extensive boronation of the substrate during deposition a diffusion barrier is required. TiN is shown to be a good diffusion barrier. Results will be presented of the deposition of TiB₂ on a TiN substrate mimicking the instantaneous change in composition of the gas mixture. Furthermore the co-deposition of TiB₂ and TiN will be presented.