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► **To cite this version:**

J.-O. Carlsson. Thermal and laser-activated CVD : a comparison. Journal de Physique IV Colloque, 1993, 03 (C3), pp.C3-207-C3-207. 10.1051/jp4:1993327 . jpa-00251384

**HAL Id: jpa-00251384**

**<https://hal.archives-ouvertes.fr/jpa-00251384>**

Submitted on 1 Jan 1993

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## **Thermal and laser-activated CVD: a comparison**

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### **ABSTRACT**

In many CVD processes there is a complex interplay between the homogeneous reactions in the vapour and the heterogeneous growth reactions. The homogeneous reactions in the vapour can be enhanced by using hot-wall reactors or photolytic laser-assisted CVD with the laser beam in parallel to the substrate surface. In contrast to the use of photolysis, use of a hot wall reactor does not permit discrimination between different homogeneous reactions in the vapour. This means that new reaction channels can be opened by photolysis and CVD materials different from those grown in a hot-wall reactor can be produced.

Thermal laser-assisted CVD (TLCVD) differs considerably from large-area CVD. The extreme suppression of the homogeneous reactions in the vapour in TLCVD means that other precursors than those used in the large-area CVD are preferred. Similarities and differences between conventional CVD and various laser-assisted CVD processes will be discussed in connection to deposition of tungsten, aluminium, carbon, and titanium carbide.