

Thin film growth by charged clusters

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Invisible charged clusters are suggested to form in the gas phase and to become the growth unit in the thin film process. Similar suggestion had been made by Glasner et al. in the crystal growth of KBr and KCl in the solution where the lead ions were added. The charged cluster model, which was suggested in the diamond CVD process by our group, will be extended to the other thin film processes. It will be shown based on both the theoretical analysis and the experimental evidences that the charged clusters are formed in the gas phase and become the growth unit of the crystal in the thin film process.