

## **Study of Precursors for Atmospheric Pressure Plasma Enhanced CVD (AP-PECVD) of Silicon Oxide Films**

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The cost and complexity of equipment needed for low temperature plasma enhanced CVD (PECVD) is often a crucial factor that has inhibited the widespread industrial use of the technology. As a result, the development of PECVD processes based on the use of novel plasma sources able to generate non-thermal plasmas at atmospheric pressure has attracted considerable interest [1-2]. Such processes do not require expensive vacuum equipment and can deposit quality oxide [3] and nitride [4] films with high growth rates.

Results from our earlier studies [5] showed that a dielectric barrier discharge with a 50 Hz high voltage supply can successfully be used as a simple and very cheap atmospheric plasma source for deposition of silicon oxide films at < 500°C with growth rates of up to 15 nm min<sup>-1</sup>. However, for many industrial applications deposition temperatures < 300°C with even higher growth rates would be desirable. Therefore we have started a comparative study of a number of organosilicon compounds as possible precursors for the AP-PECVD of silicon dioxide films. In this paper we report on some detailed results obtained with hexamethyldisiloxane (HMDSO) and hexamethyldisilazane (HMDS), and some preliminary results for diacetoxydi-t-butoxysilane (DADBS).

### References

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