

Strength and permeation properties of SiO₂ shells produced from silicon doped GDP shells

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Abstract. While the ability to make very uniform glass shells from M-doped glow discharge polymer (GDP) deposited by plasma polymerization (where M = Si or Ti) has been around for a few years [M.L. Hoppe, Fusion Sci. and Technol. **38**, 42 (2000); M.L. Hoppe, Fusion Sci. and Technol. **41**, 234 (2002)], not much is known about the physical properties of the shells, especially as they compare to the drop-tower produced glass shell. Recent experiments on Omega have shown that glass shells made from SiGDP generally perform better (higher yield) than similar drop-tower produced shells, however they also seem to be harder to handle than drop-tower produced shells without breaking. In this report we will assess the physical properties, specifically strength and permeation, of glass shells made by this technique.

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