SiO_2 Electron-Enhanced Atomic Layer Deposition (EE-ALD) at Low Temperature Using Disilane and Ozone or Water as Reactants

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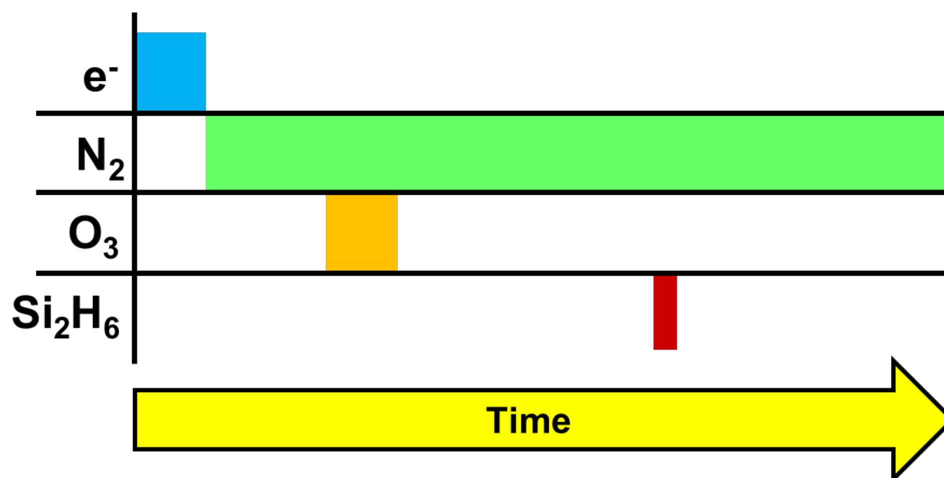

Figure 1. Processing sequence for SiO_2 EE-ALD based on sequential electron, O_3, and Si_2H_6 exposures. N_2 flow is continuous except during electron exposures.

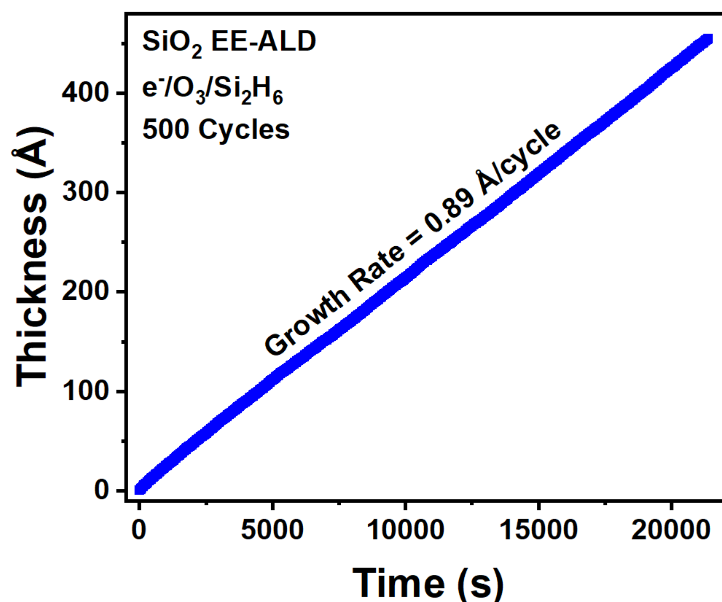

Figure 2. In situ spectroscopic ellipsometry measurement of SiO_2 thickness versus time during SiO_2 EE-ALD based on sequential electron, O_3, and Si_2H_6 exposures. SiO_2 growth rate is 0.89 Å/cycle over 500 EE-ALD cycles.