## Supporting Information: Influence of Different Ester Side Groups in Polymers on the Vapor Phase Infiltration with Trimethyl Aluminum

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**Figure S1.** Al, C, O and Si content of the vapor infiltrated polymers POAcSt (a-c), PNMA (d-f) and PtBMA (g-i) as a function of etch time, *i.e.*, depth profile of the composition. For the infiltration experiments, different exposure times of TMA were used:  $1 \times 10 \text{ s}$  (a, d, g),  $2 \times 20 \text{ s}$  (b, e, h) and  $1 \times 40 \text{ s}$  (c, f, i).



**Figure S2.** Differential scanning calorimetry (DSC) plots of the bare polymers POAcSt (a), PNMA (b) and PtBMA (c) with assigned glass transition temperature  $T_g$ .



**Figure S3.** 3D models of geometry optimized structures obtained from first principles DFT calculations. The structures are, from left to right, the considered products POAcSt R1 (a), POAcSt R2 (b), PNMA R1 (c), PNMA R2 (d), PtBMA R1 (e) and PtBMA R2 (f), respectively.