

**Figure 1.** Schematic illustration of approach 1: (a) plasma polymerization of  $C_4F_8$  on Si (100); (b) micro- and nanoscale patterning of  $C_4F_8$  layer via femtosecond laser pulses; (c) AS-ALD of Pt thin films on patterned  $C_4F_8/Si$  interface.



Figure 2. SEM images: (a) Micro- and nanoscale patterning of  $C_4F_8$  plasma polymer layer by femtosecond laser pulses; (b) AS-ALD of Pt on patterned  $C_4F_8$ /Si interface.



**Figure 3.** Schematic illustration of approach 2: (a) C<sub>4</sub>F<sub>8</sub> plasma polymerization on Si (100); (b) C<sub>4</sub>F<sub>8</sub> plasma polymer layer patterning and Si surface modification via NLL; (c) AS-ALD of Pt thin films on modified Si via NLL.



Figure 4. SEM images: AS-ALD of Pt thin films on patterned Si after NLL.