



**Figure 1:** (a) TEM micrograph of a graphene nanosheet after 10 ALD cycles carried out at 300 °C using the pulsing sequence: 2 min/5 min/30 s/5 min. (b) TEM micrograph of the tip of a nanorod encapsulated by an amorphous layer. (c) FESEM micrograph of the TiO<sub>2</sub>/graphene composites obtained after 10 cycles at 300 °C using the same pulsing sequence as in (a). (d-f) Selection of TEM micrographs of nanorods of peculiar morphology: (d) curved nanorod, (e) nanorod aligned with the edge of the nanosheet, and (f) v-shaped nanorods.