Electronic Supplementary Information for

Atmospheric growth and strong visible luminescence of anatase titanium oxide films with various orientations

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a. SEM image of TiO₂ film prepared by PECVD method.

![SEM image of TiO₂ film prepared by PECVD method](image)

**Figure S1** SEM image of the TiO₂ film corresponding to the testing points marked in Fig. 3 (from left to the right). In-glow section: (a) and (b); Boundary section: (c) and (d); Afterglow section: (e) and (f). The morphology varies due to the diversity in ion density and temperature of each section.

b. TEM image of TiO₂ film corresponding to anatase (004).

![TEM image of TiO₂ film corresponding to anatase (004)](image)

**Figure S2** TEM image of the TiO₂ film corresponding to the lattice orientation of anatase (004). The clear lattice fringes indicate the existence of anatase (004) and further confirm the lattice
structure which matches the results presented in XRD patterns.