

Supplementary Information

Carbon-doped freestanding TiO₂ nanotube arrays in dye-sensitized solar cells

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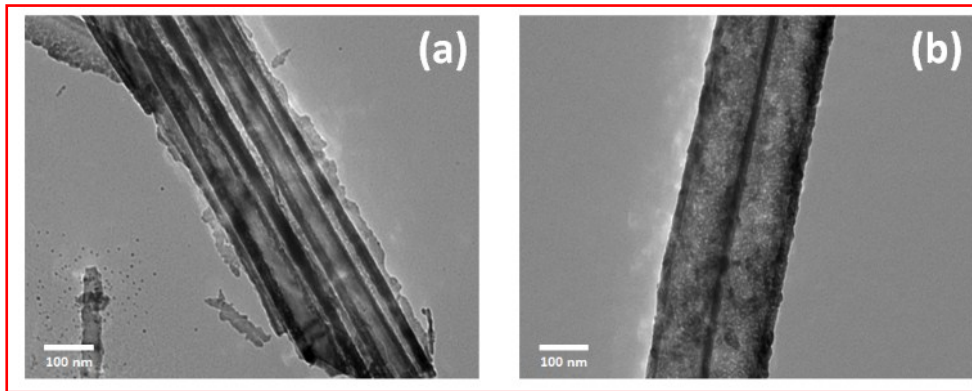


Fig. S1. TEM images of TiO₂ nanotube arrays (a) without carbon doping and (b) with carbon doping.

Fig. S1 shows TEM images of TiO₂ nanotube arrays with and without carbon doping. The channels of the undoped TiO₂ nanotube arrays were relatively clear and transparent, as shown in Fig. S1 a. Thus, the boundary lines and hollow cores can have highly different contrasts in TiO₂ nanotube arrays. However, after the carbon doping step the TiO₂ nanotube arrays were stained by a collection of small masses, as shown Fig. S1 b. These fully covered the TiO₂ nanotube arrays, causing the difference between the contrasts of the boundary lines and the hollow cores to decrease.