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Self-accelerated electrochemiluminescence emitters of Ag@SnO<sub>2</sub> nanoflowers for sensitive detection of cardiac troponin T

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# 1 Self-accelerated Electrochemiluminescence Emitters of Ag@SnO<sub>2</sub>

## 2 Nanoflowers for Sensitive Detection of Cardiac troponin T

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### 7 Abstract

8 Metal oxide semiconductor nanocrystals (NCs), which emerged as a novel class  
9 of electrochemiluminescence (ECL) emitters with low cost and good biocompatibility,  
10 have attracted particular research interests in ECL biosensors. However, their  
11 analytical applications still remained a substantial challenge of relatively low ECL  
12 intensity. Herein, the novel self-accelerated ECL emitters of silver nanoparticles  
13 functionalized SnO<sub>2</sub> nanoflowers (Ag@SnO<sub>2</sub> NFs) were first prepared by *in situ*  
14 generating silver nanoparticles on the surface of SnO<sub>2</sub> nanoflowers *via* silver mirror  
15 reaction, which exhibited high-intensity ECL emission with the maximum emission  
16 peak at 542 nm in the case of S<sub>2</sub>O<sub>8</sub><sup>2-</sup> as a co-reactant. It was worthy to note that  
17 compared with traditional ECL emitters of SnO<sub>2</sub> NCs with diameters below 10 nm,  
18 the obtained Ag@SnO<sub>2</sub> NFs with diameters about 1~2 μM showed a stronger ECL  
19 emission. The ECL enhancement was supposed to derive from 1) the strong size effect  
20 of flower-like nanostructure aggregating by ultrathin SnO<sub>2</sub> nanosheets, which would

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