

**SM 1** Thermal variation of the thermo-power of Ba0.925Bi0.05 (Ti0.65Zr0.30Sn0.05)O3.



**SM 2** The EIS plot of BBiTZS in neutral solution

**SM 3** Photo degradation yield of Rhodamine B compared to numerous studies reported in the literature

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| Semiconductor | Pollutant | Degradation rate (%) | Source of irradiation | Ref. |
| ZnO | Rhodamine B Reactive Blue 19 | 77100 | Solar light | [49] |
| Mg doping ZnO  | Rhodamine B | ~ 78 | UV light  |  [50] |
| Ca0.5Nb3O8.1.5H2O | Rhodamine B | 48 | Solar light |  [51] |
| SnS2-CdO | Rhodamine BCongo red | ~ 86~ 92 | Visible light |  [52] |
| Ag doping TiO2 | Rhodamine B | 97 | UV light | [53] |
|  | Rhodamine B | 50 | Solar light | This work |