## Supplementary information for

## Photodegradation Activity of Sputtered Indium Oxide and Sub-oxide Thin Films on Rhodamine-B Dye

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|  | Unit cell | Sub-oxide I | Sub-oxide II |
| :---: | :---: | :---: | :---: |
| Cavity 1 Volume | $32.01 \AA^{3}$ | $65.1728 \AA^{3}$ | $34.2260 \AA^{3}$ |
| Cavity 1 Surface Area | $61.7038 \AA^{2}$ | $90.1148 \AA^{2}$ | $64.1029 \AA^{2}$ |
| Cavity 1 squared gyration radius | $2.6053 \AA^{2}$ | $3.9553 \AA^{2}$ | $2.6322 \AA^{2}$ |
| Cavity 2 Volume | $27.9772 \AA^{3}$ | $30.6001 \AA^{3}$ | $37.8965 \AA^{3}$ |
| Cavity 2 Surface Area | $54.4932 \AA^{2}$ | $55.0001 \AA^{2}$ | $67.7500 \AA^{2}$ |
| Cavity $\quad 2$ gyration radius | $2.3265 \AA^{2}$ | $2.3717 \AA^{2}$ | $2.8914 \AA^{2}$ |
| Cavity 3 Volume |  | $62.7446 \AA^{3}$ | $37.0417 \AA^{3}$ |
| Cavity 3 Surface Area |  | $114.1808 \AA^{2}$ | $63.8927 \AA^{2}$ |
| Cavity 3 squared gyration radius |  | $8.5463 \AA^{2}$ | $2.6880 \AA^{2}$ |
| Cavity 4 Volume |  | $27.1872 \AA^{3}$ | $25.6958 \AA^{3}$ |
| Cavity 4 Surface Area |  | $53.8397 \AA^{2}$ | $53.2402 \AA^{2}$ |
| Cavity 4 squared gyration radius |  | $2.3241 \AA^{2}$ | $2.1592 \AA^{2}$ |
| Cavity 5 Volume |  |  | $91.3246 \AA^{3}$ |
| Cavity 5 Surface Area |  |  | $152.3633 \AA^{2}$ |
| Cavity 5 squared gyration radius |  |  | $9.9958 \AA^{2}$ |
| Total Volume | $59.9 \AA^{3}$ | $185 \AA^{3}$ | $226 \AA^{3}$ |
| Average squared gyration radius |  | $4.299 \AA^{2}$ | $4.073 \AA^{2}$ |
|  |  |  |  |
|  |  |  |  |

Table S1. The continuous cavity domains determined by PyModal for a stochiometric $\ln _{2} \mathrm{O}_{3} 2 \times 1 \times 1$ unit cell, and suboxide unit cells generated by the Supercell program. The grey highlighted rows represent the values for which the averaged cavity volume is determined.

