## List of Abbreviations

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|---|---|
| NPs | Nanoparticles |
| NCs | Nanocrystals |
| FWHM | Full Width at Half Maximum |
| XRD | X-ray powder diffraction |
| HRTEM | High-resolution transmission electron Microscopy |
| SAED | Selected Area Electron Diffraction |
| FESEM | Field emission scanning electron Microscopy |
| EDS | Energy dispersive x-ray spectroscopy |
| FTIR | Fourier Transform Infrared |
| ACN | Acetonitrile |
| UV-Vis | Ultraviolet-Visible Spectrophotometer |
| DPM | Diphenylmethane |
| BPh | Benzophenone |
| $\zeta$ | Zeta Potential |
| BDE | Bond dissociation energy |
| $N_A$ | Acceptor Density |
| DI | Deionized |
| TLC | Thin-layer chromatography |
| BQ | Benzoquinone |
| PVA | Polyvinyl alcohol |
| XPS | X-ray photoelectron spectroscopy |
| TBHP | Tertiary butyl hydroperoxide |
| MeOH | Methanol |
| ROS | Reactive Oxygen Species |
| CC | Chronocoulometry |
| HPMV | High-Pressure Mercury Vapour |
| RhB | Rhodamine |
| DFT | Density Functional theory |
| IB | Intermediate band |
| $\beta$ | Recombination rate |
| SDS | Sodium dodecyl sulfate |
| $N_D$ | Donar density |
| $\sigma$ | Conductivity |
| VSM | Vibrating sample Magnetometry |
| RE | Reference electrode |
| CE | Counter electrode |
| SCE | Saturated calomel electrode |
| VB | Valance band |
| CB | Conduction band |
| $V_s$ | Sulfur vacancy |
| $V_{Zn}$ | Zn vacancy |

*Other abbreviations and symbols are explained in the text.