SUPPLEMENTARY MATERIALS

Effect of heating rate on the photocatalytic activity of Ag–TiO₂ nanocomposites by one-step process via aerosol routes

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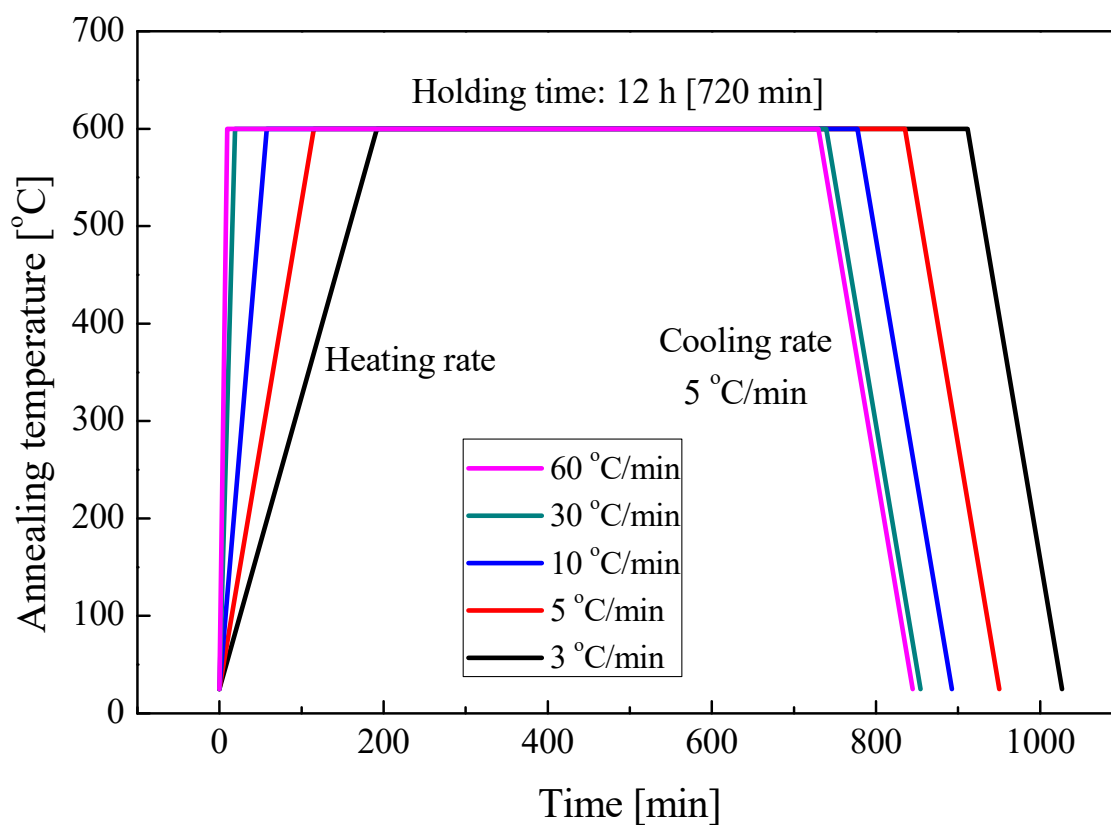
Figure S1: Schematic of the effect of heat-treatment processes on the fabricated nanocomposite films at different heating rates.
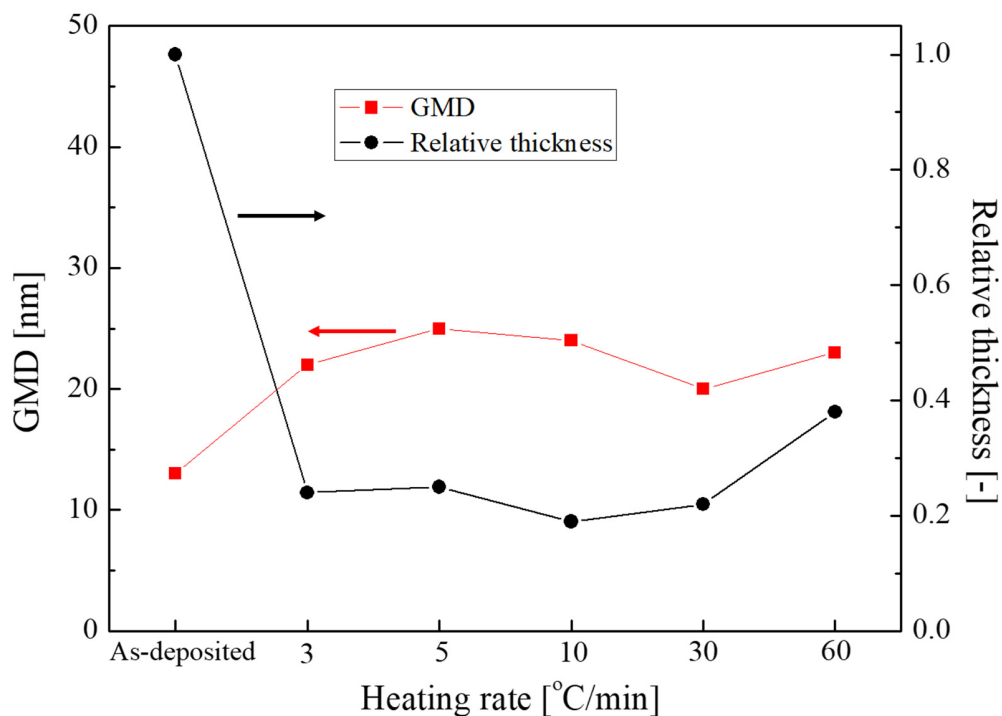
Figure S2: Geometric mean diameter (GMD) and relative thickness of the nanocomposite particles after annealing at 600 °C at different heating rates from 3 to 60 °C/min including those of the as-deposited film.
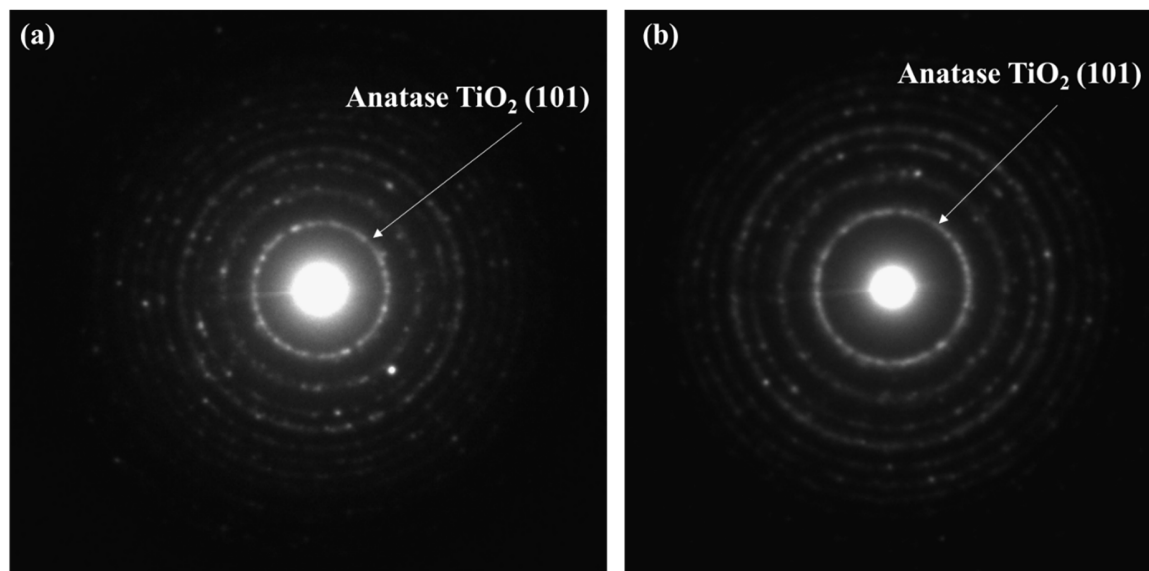

Figure S3: Selected-area electron diffraction (SAED) patterns of the Ag-TiO₂ nanocomposite films after annealing at 600 °C at heating rates of 5 °C/min (a) and 60 °C/min (b). The diffraction peak of anatase (101) is the dominant phase of the nanocomposite films.
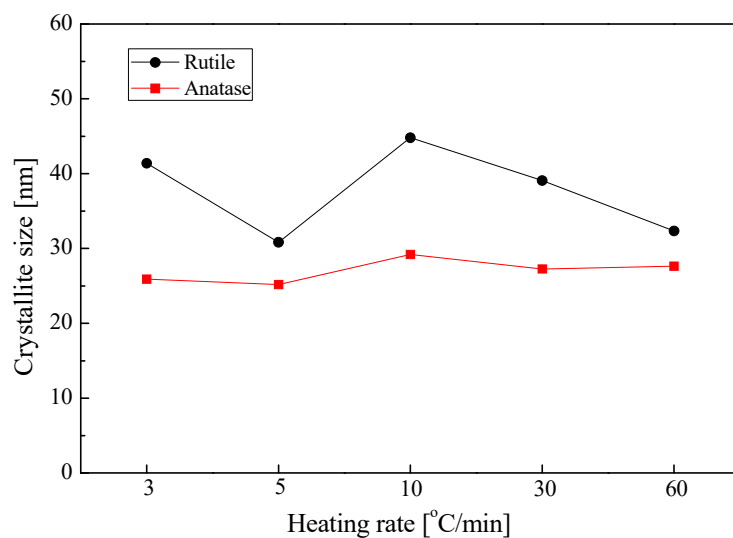
Figure S4: Crystallite size of anatase and rutile of the Ag-TiO$_2$ nanocomposite films after annealing at 600 °C at different heating rates. The average crystallite sizes of anatase and rutile were estimated by the Scherrer equation based on the diffraction peaks of anatase (101) and rutile (110), respectively.
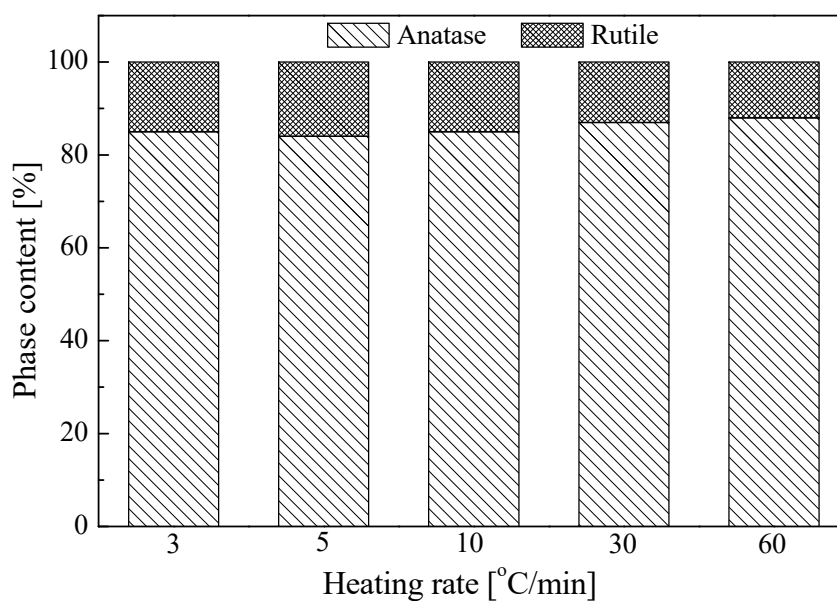

Figure S5: Phase content of anatase and rutile of the Ag-TiO$_2$ nanocomposite films after annealing at 600 °C at different heating rates. The phase content of anatase and rutile was estimated using Eq. 3 (shown in the manuscript) based on the diffraction peaks of anatase (101) and rutile (110), respectively.
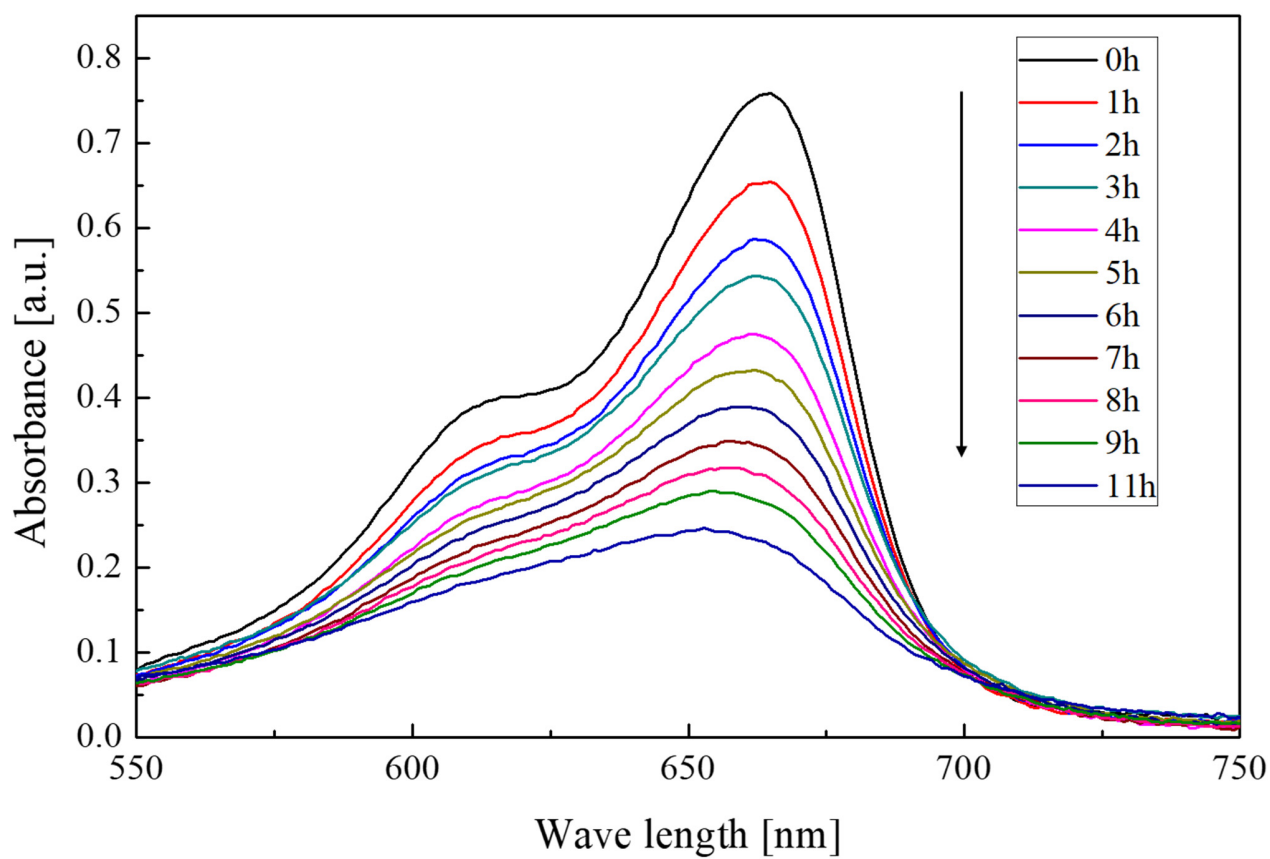
Figure S6: UV-vis absorption of a 2 mg/L methylene blue (MB) aqueous solution under UV light irradiation in the presence of the Ag-TiO2 nanocomposite film after an annealing temperature and heating rate of 600 °C and 60 °C/min, respectively.
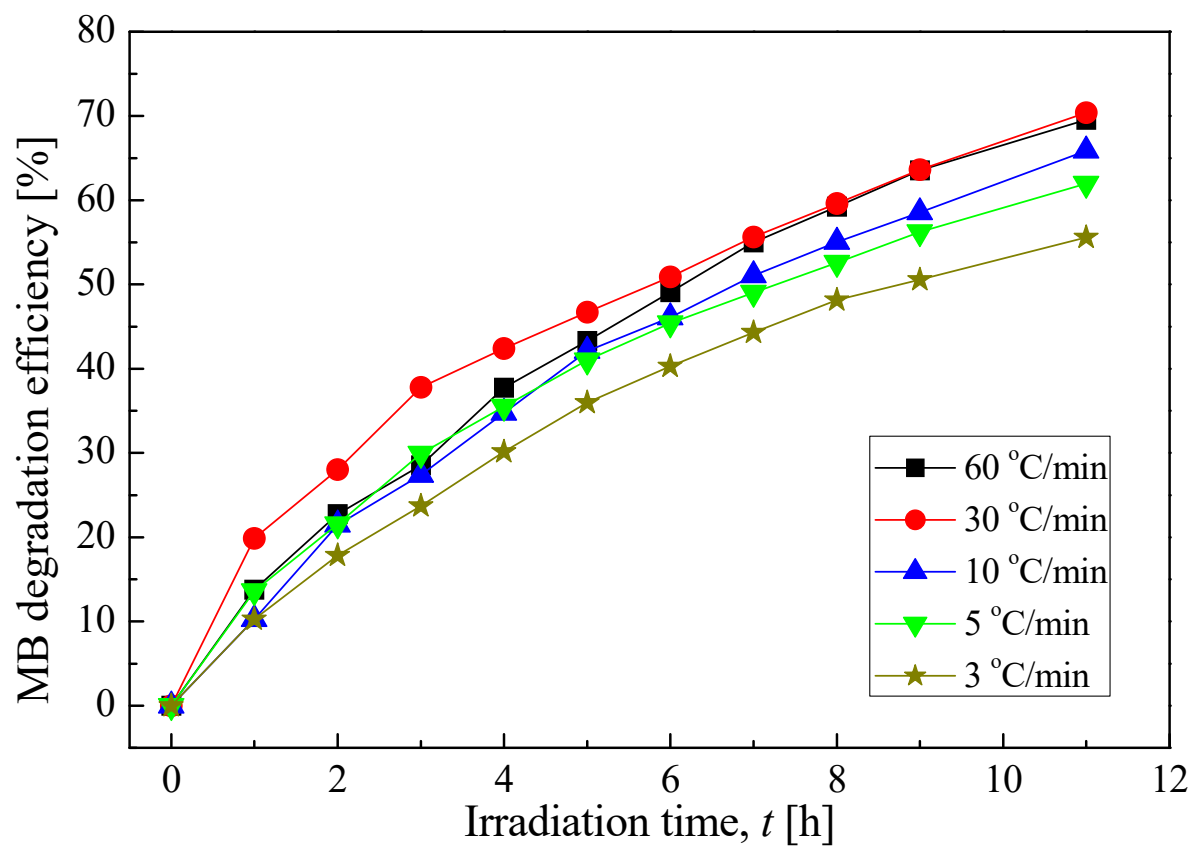
Figure S7: MB degradation efficiency (MDE) of the Ag-TiO$_2$ nanocomposite films after annealing at 600 °C at different heating rates (3-60 °C/min). MDE was calculated using Eq. 4 (shown in the manuscript).