†Electronic Supplementary Information (ESI) available:

Fig. S1 The XRD patterns of Bi(Mg\(_{3/8}\)Fe\(_{2/8}\)Ti\(_{3/8}\))O\(_3\) obtained at synthesizing temperature of 810 °C, 830 °C, and 850 °C.

Fig. S2 The DSC-TG patterns of as-synthesized Bi(Mg\(_{3/8}\)Fe\(_{2/8}\)Ti\(_{3/8}\))O\(_3\). The falling branch of the heat flow curve indicates that the Bi(Mg\(_{3/8}\)Fe\(_{2/8}\)Ti\(_{3/8}\))O\(_3\) sample begins to decompose at 850 °C.

Fig. S3 The XRD patterns of the used and fresh powders of Bi(Mg\(_{3/8}\)Fe\(_{2/8}\)Ti\(_{3/8}\))O\(_3\) for the photocatalytic experiment.