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Developing a photocatalyst with the necessary characteristics of being cheap, efficient and robust for visible-light-driven water splitting remains a serious challenge within the photocatalysis field. Herein, an effective strategy, deprotonating g-C3N4 with Na ions from low-cost precursors, is reported. The deprotonated g-C3N4 exhibits a stable and reproducible H2 and O2 evolution rate of 31.5 and 15.2 μmol h(-1) from pure water over 24 h. Our findings reveal that the extraordinary photoreactivity comes from the enhanced optical absorption, the promoted charge transfer, and the completely inhibited H2O2 intermediate due to the deprotonation.

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