# Asymmetric cyano-rich crystalline carbon nitride with powerful dipole field for efficient hydrogen peroxide photosynthesis

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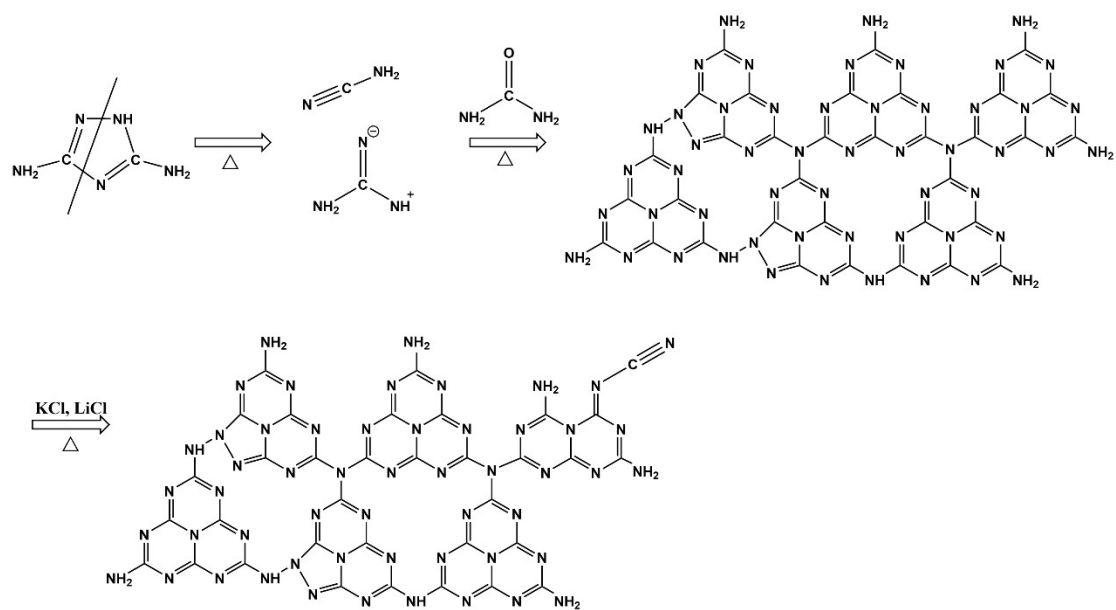
Scheme S1. Schematic illustration of the synthesis process of MACN.
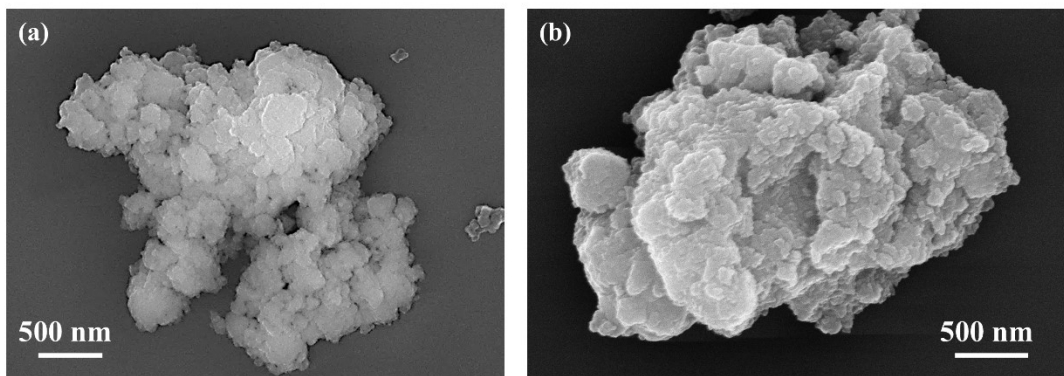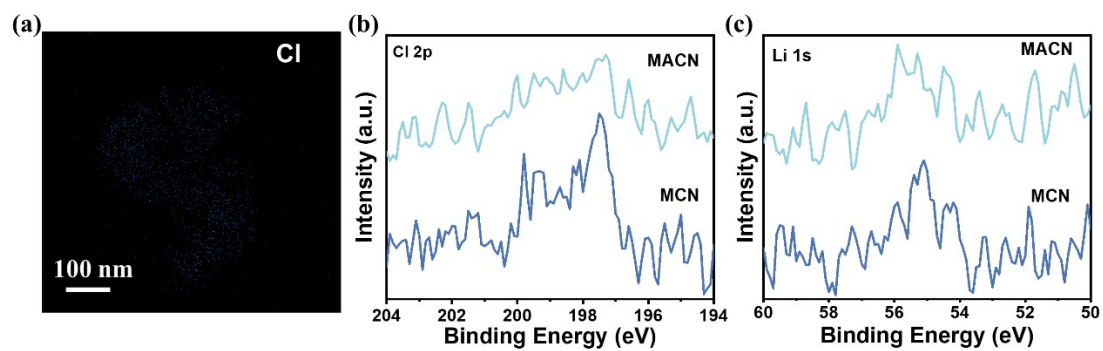
Figure S1. SEM images of (a, b) MACN.

Figure S2. (a) EDX elemental mapping images of Cl element of MACN, and High-resolution XPS spectra of (b) Cl 2p and (c) Li 1s over MACN.

Elements / Samples	N (%)	C (%)	H (%)	C/N (%)
BCN	60.85	34.57	2.26	56.81
ACN	60.29	34.13	2.23	56.61
MCN	43.94	26.6	2.62	60.54
MACN	43.92	26.35	2.52	60.00

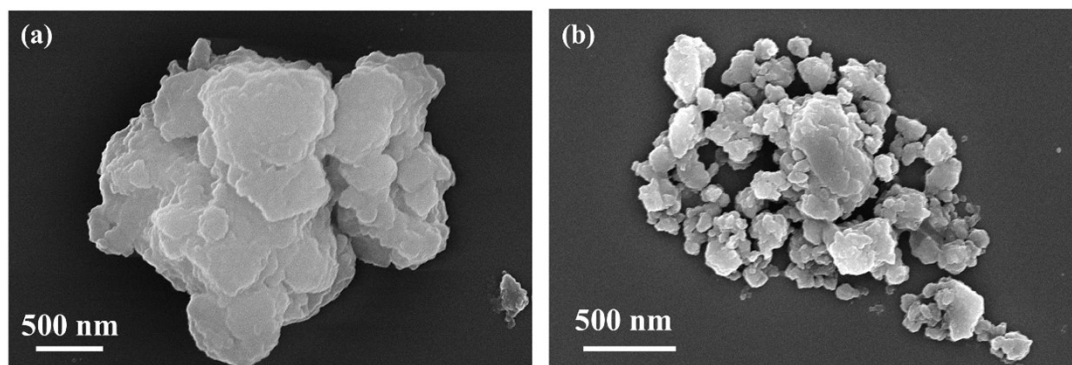Table S1. The elemental analysis of BCN, ACN, MCN and MACN

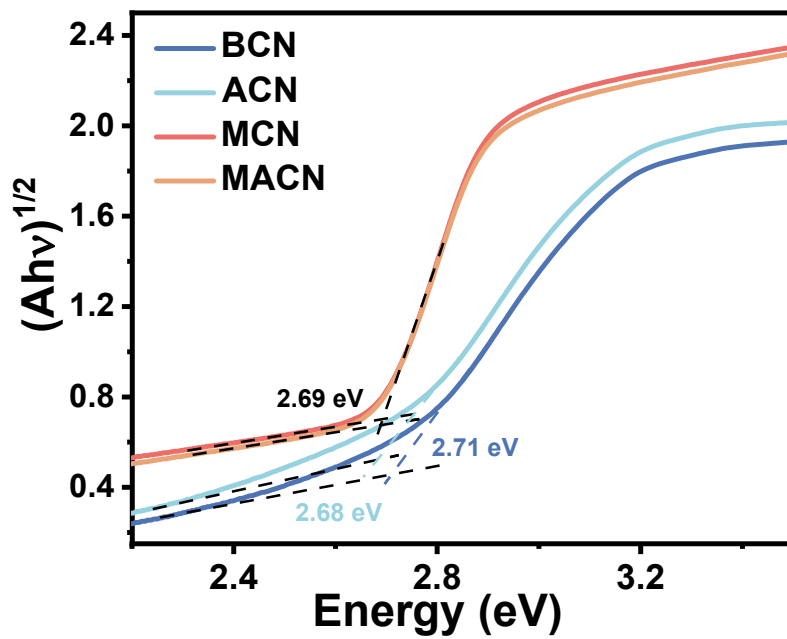Figure S3. SEM images of (a, b) MACN after the photocatalytic reaction.

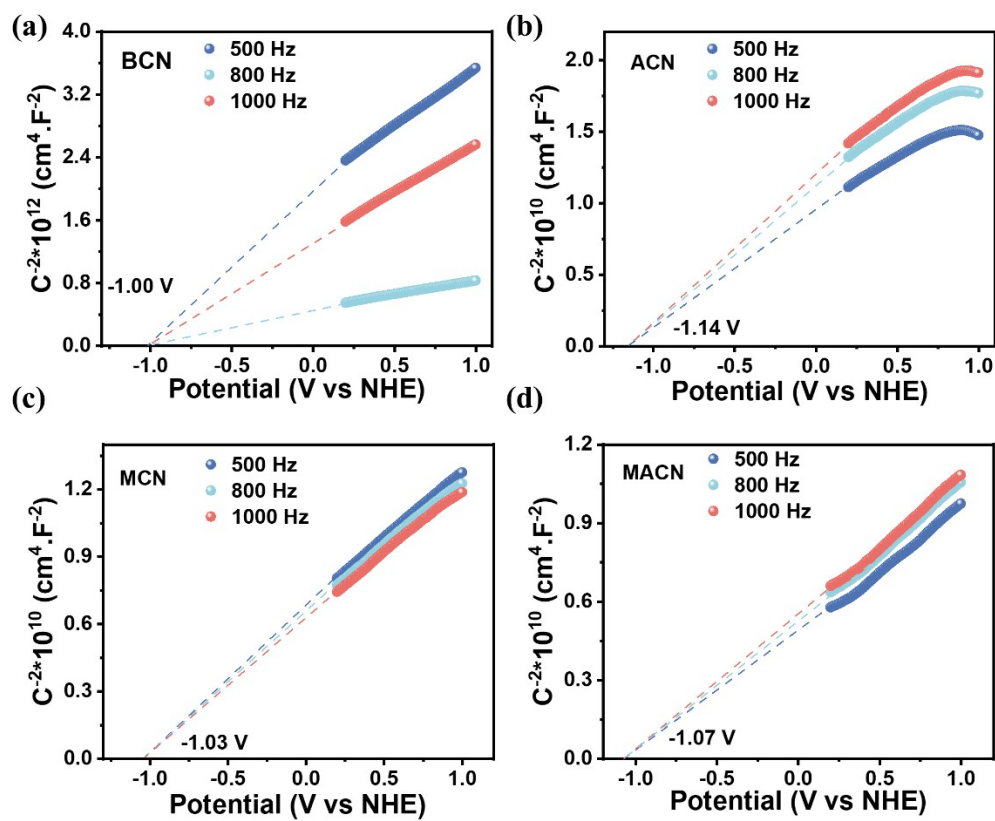Figure S4. Band gaps of (a) BCN, (b) ACN, (c) MCN and (d) MACN.

Figure S5. Mott–Schottky plots of (a) BCN, (b) ACN, (c) MCN and (d) MACN.