Electronic supplementary information

Bright yellow fluorescent N-doped Ti_3C_2 MXene quantum dots as an "on/off/on" nanoprobe for selective As^{3+} ion detection

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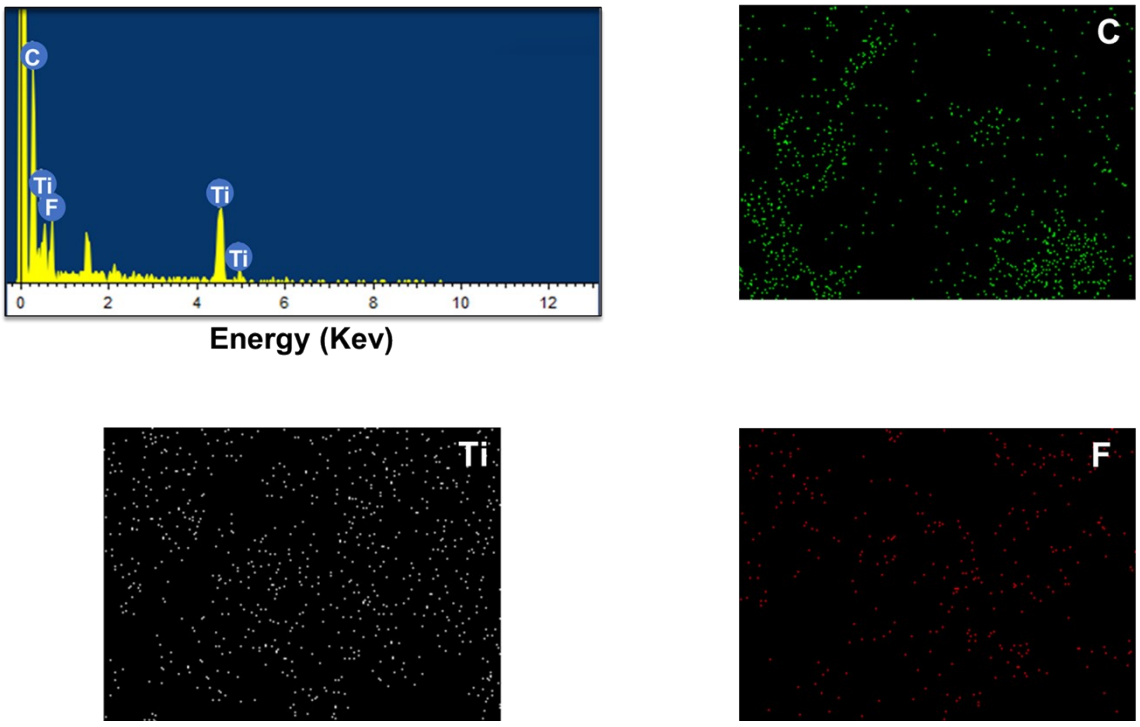

Fig. S1 The images of EDX spectrum and elemental mapping show the existence of elements (such as C, Ti and F) in MXene.

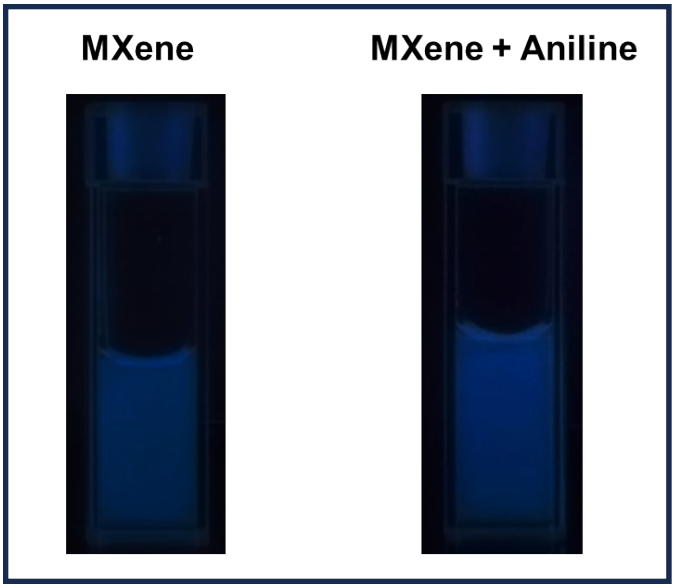

Fig. S2 Fluorescence digital images of MQDs synthesized from MXene (left side) and MXene+Aniline (right side) at 150 ºC for 14 h.

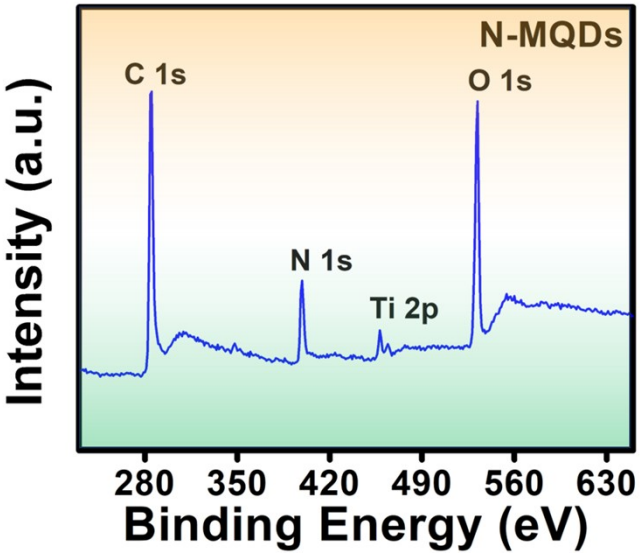

Fig. S3 XPS survey spectrum of N-MQDs.

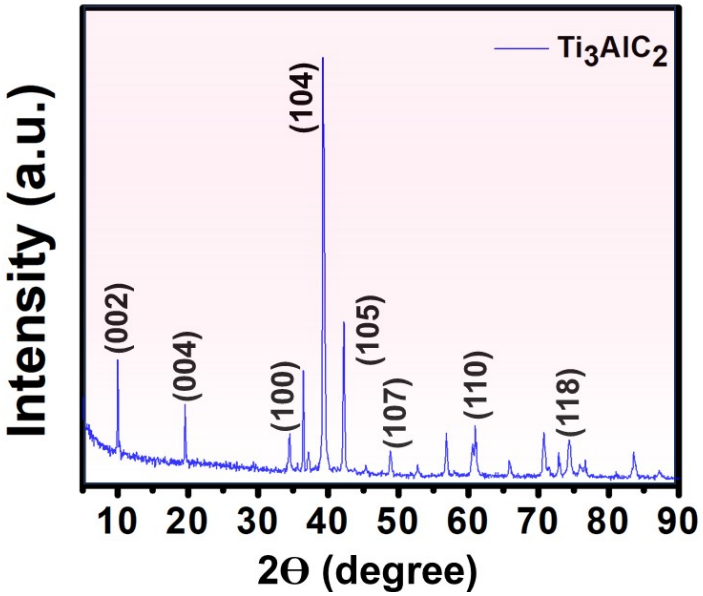

Fig. S4 XRD spectrum of bulk Ti_3AlC_2.

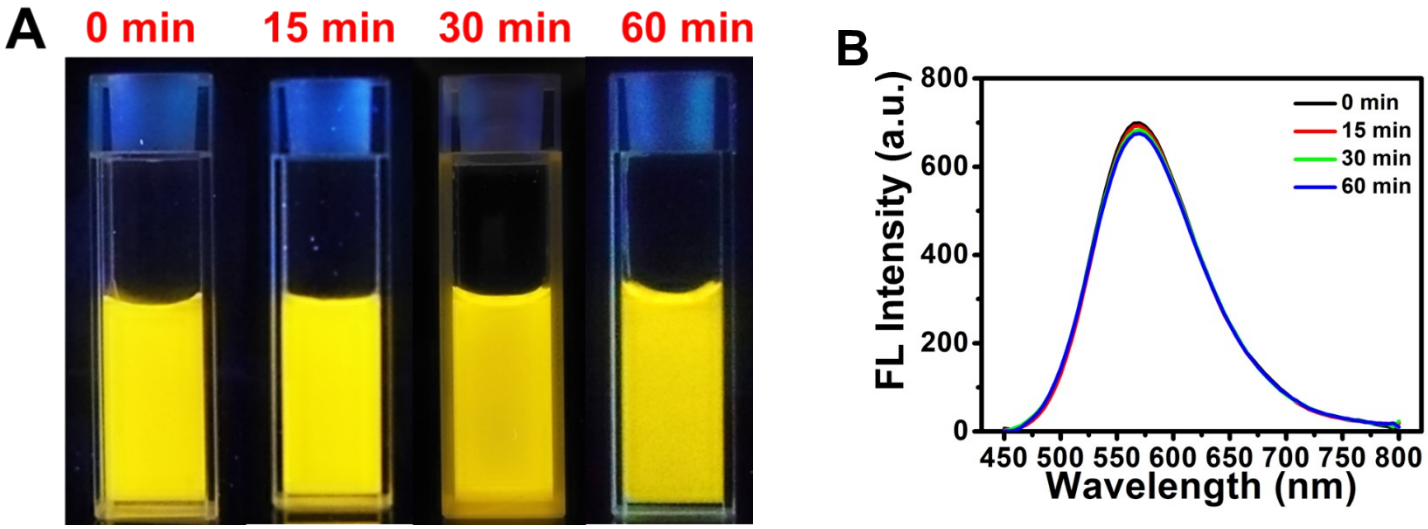

Fig. S5 Photobleaching study of N-MQDs. **(A)** Fluorescence digital images and **(B)** emission spectra of N-MQDs at various times.

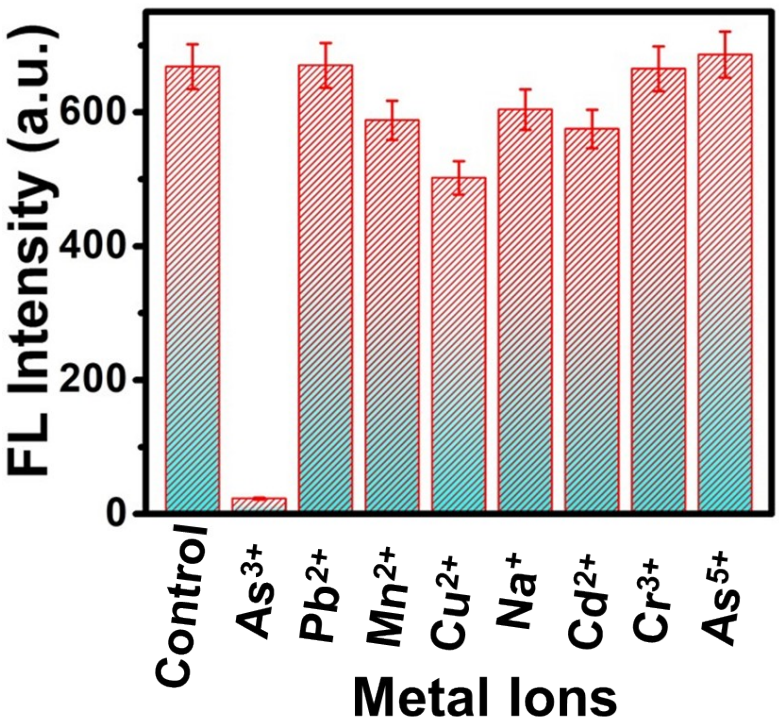

Fig. S6 Fluorescence intensity of N-MQDs after incubation with different metal ions.

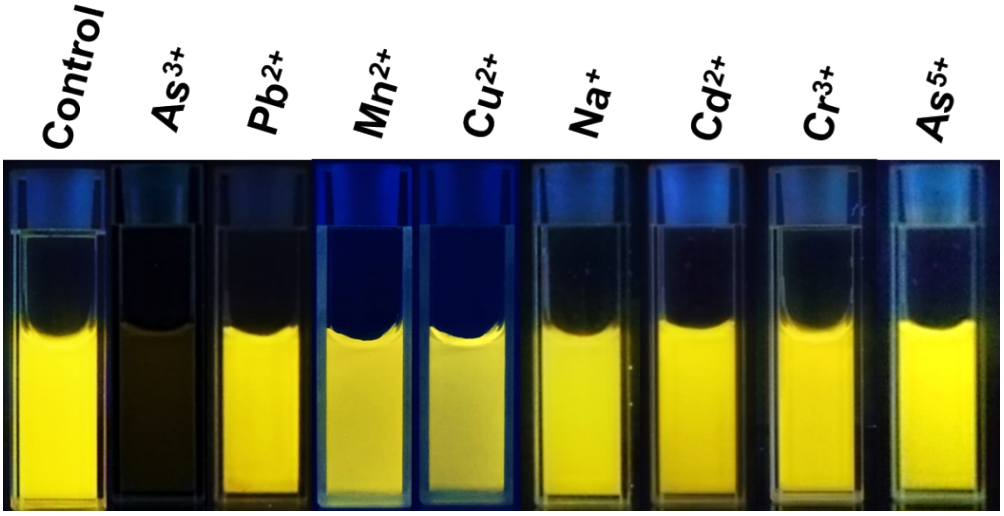

Fig. S7 Fluorescence digital images of N-MQDs after incubation with the mentioned metal ions.

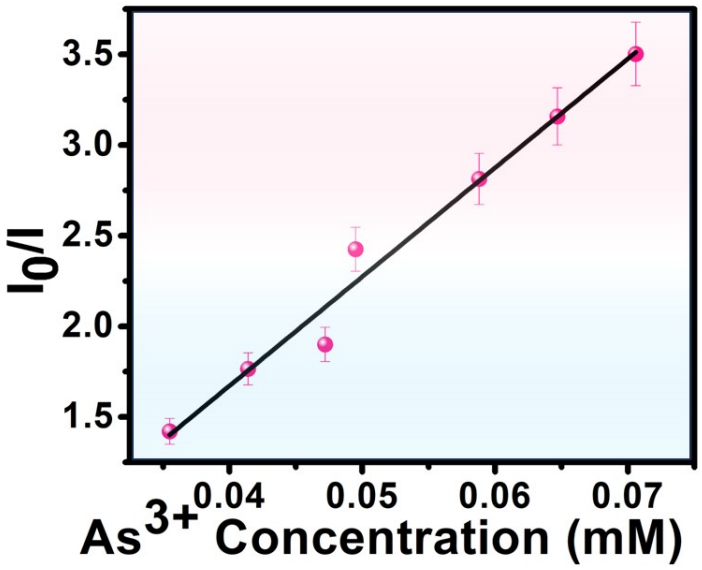

Fig. S8 Linear plot I_0/I versus concentration of As^{3+} ion.

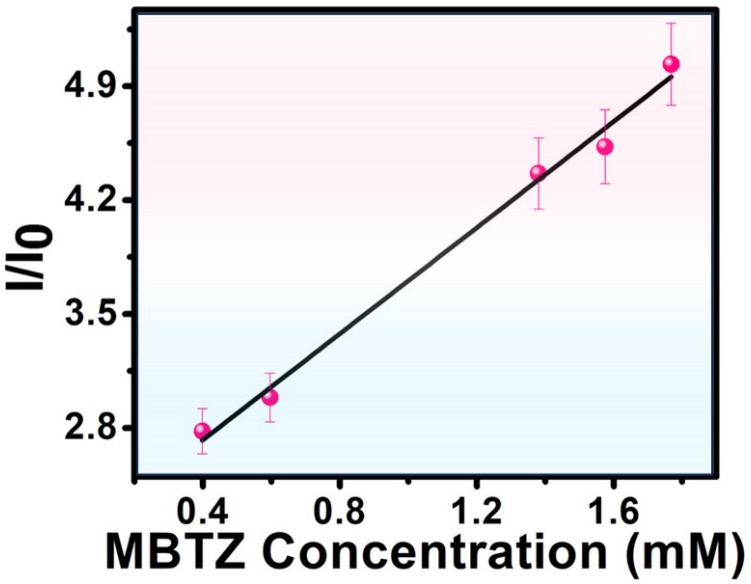

Fig. S9 Linear plot I/ I_0 versus concentration of MBTZ.

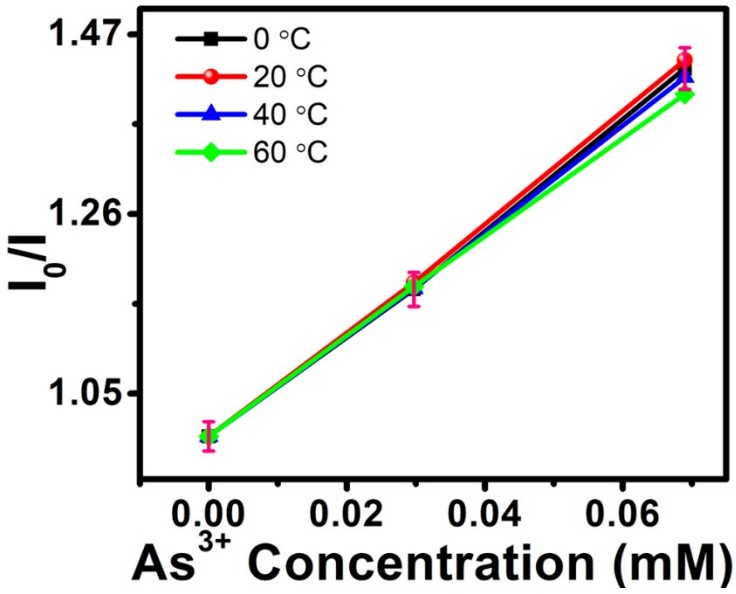

Fig. S10 Stern-Volmer curves at different temperatures ranging between 0 ºC and 60 ºC.

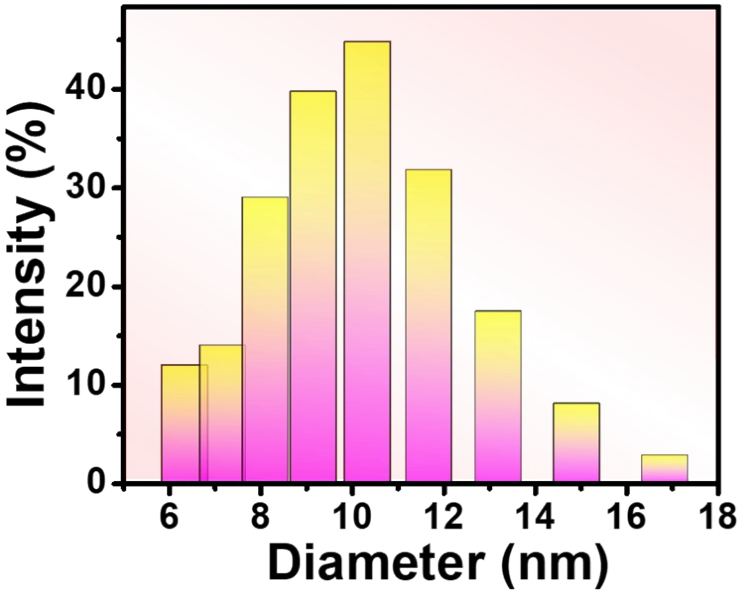

Fig. S11 DLS measurement of N-MQDs.

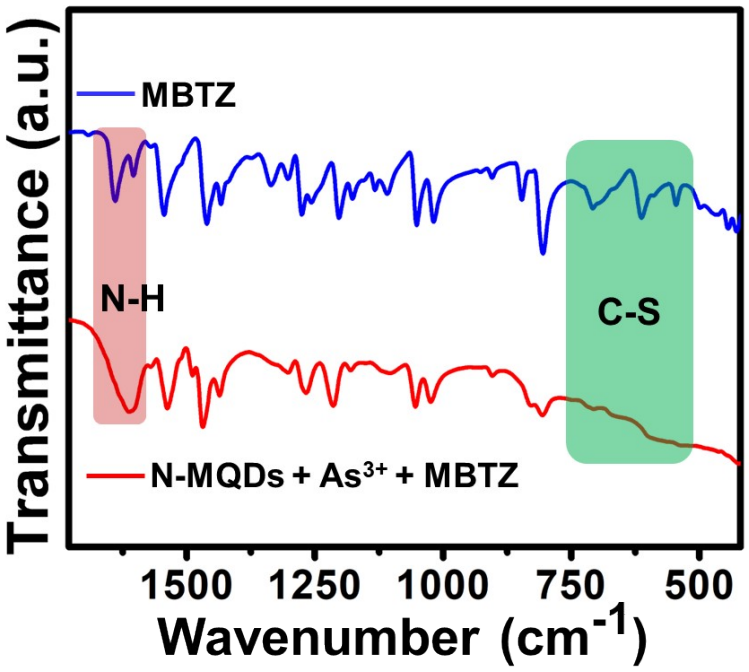

Fig. S12 FTIR spectra of MBTZ before and after addition with N-MQDs + As^{3+} system.