Supporting information

Scheme S1. Schematic illustration of electrochemical mechanism of MTZ.
**Scheme S2:** Schematic illustration for electron transfer mechanism in Mo$_2$C/f-CNf nanocomposite.

![Scheme S2](image)

**Fig S1.** (A) (D) LSV curve Mo$_2$C/f-CNf modified RDE in N$_2$ purged 0.1 M PBS with presence of 0.825 mM MTZ by fluctuating rpm from ((a) 500, (b) 1000, (c) 1500, (d) 2000, (e) 2500, and (f) 3000, (B) Levich plot (n = 3), and (C) k-L plot (n = 3).

![Fig S1](image)

**Fig S2.** (A) The MTZ response of cyclic stability test (100 cycle) of Mo$_2$C/f-CNf/GCE in N$_2$ saturated 0.05M PBS (pH7). (B) Reproducibility curve of Mo$_2$C/f-CNf/GCE calibration plot and Inset; corresponding CV curve with MTZ (0.825 mM). (C) The LSV curve for real sample analysis((a) 15 µM, (b) 30µM, (c) 40 µM(c) and 50 µM.

![Fig S2](image)