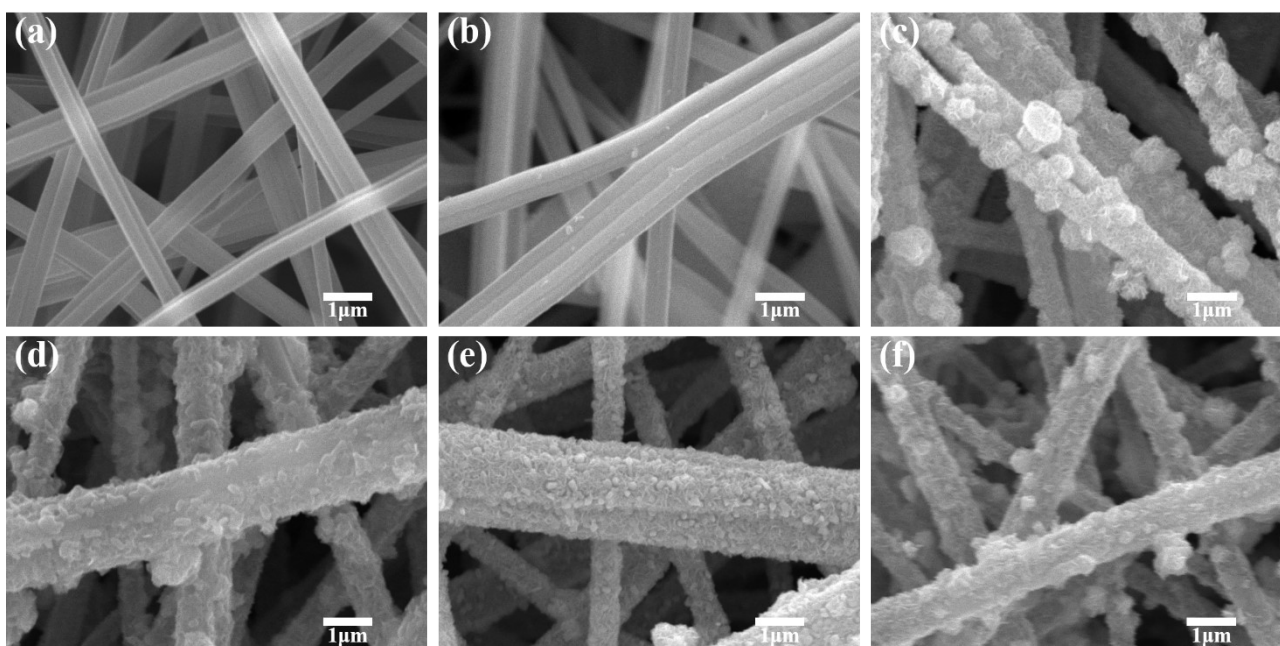
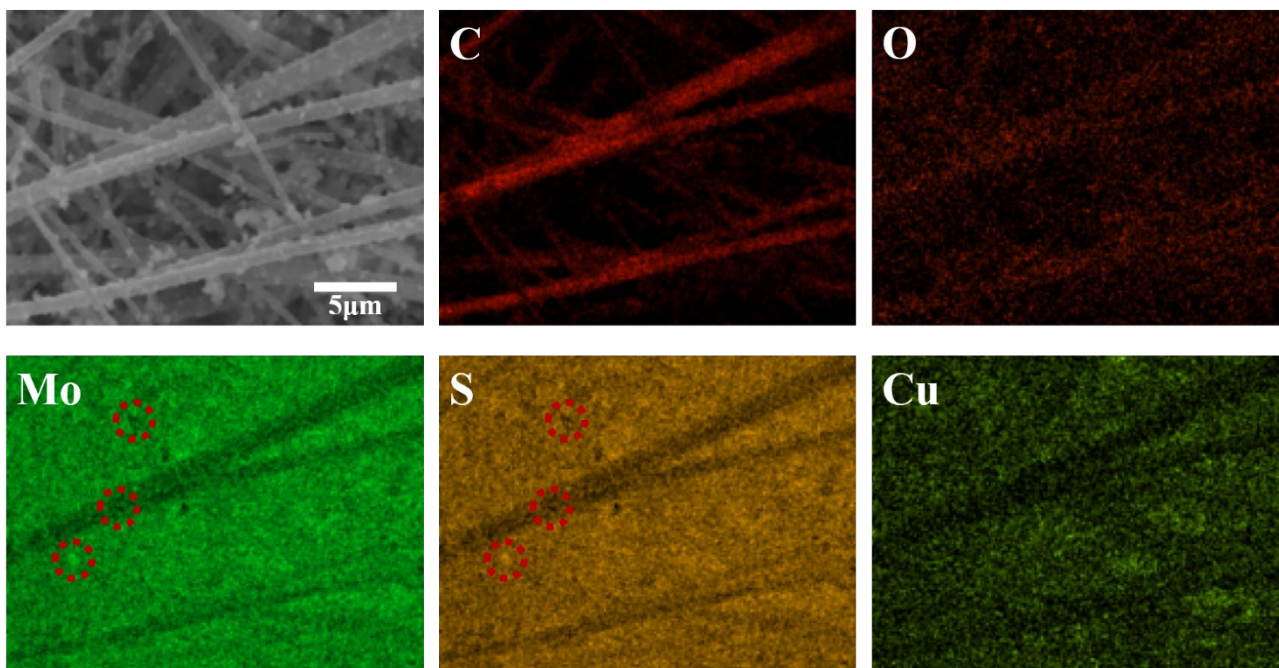


## A novel Cu single-atom catalyst prepared through the adsorption characteristics of MoS<sub>2</sub>: From preparation to application

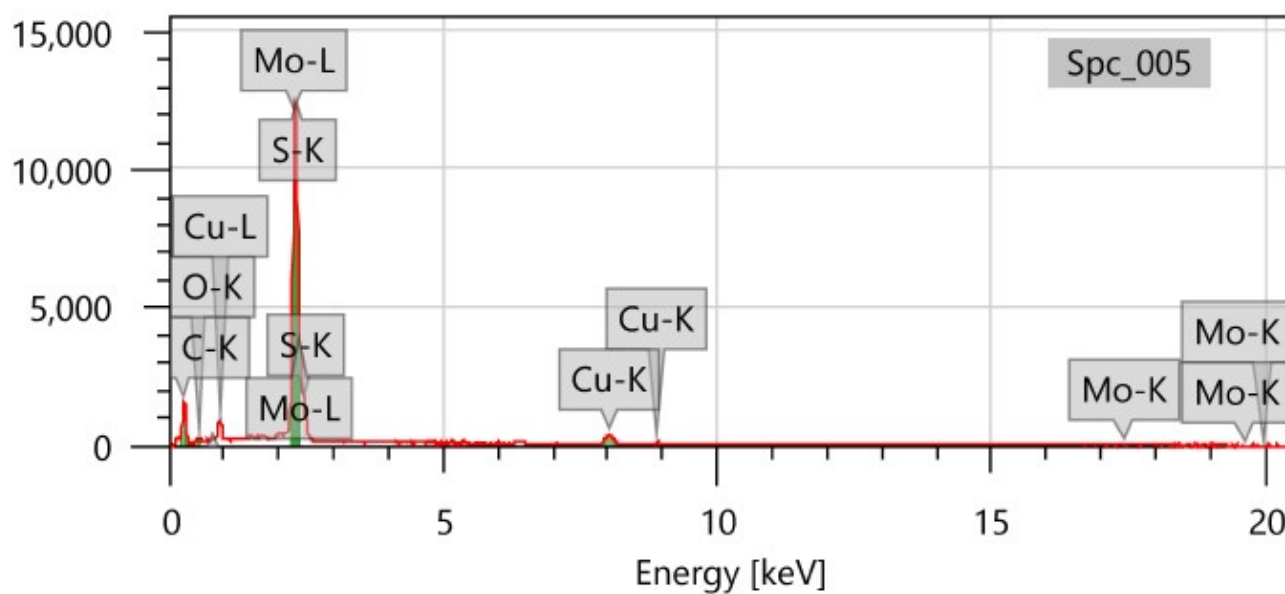
Xu Zhang <sup>a, 1</sup>, Lang Ran <sup>a, 1</sup>, Yajuan Zheng <sup>a</sup>, Heng Zhang <sup>a</sup>, Lingxiao Zhu <sup>a</sup>, Lincheng Zhou <sup>a, \*</sup>, Hong Zhang <sup>b, \*</sup>



**Fig. S1** SEM images of (a) ECN , (b) PDA@ECN , (c) MoS<sub>2</sub>@ECN , (d) Cu@MoS<sub>2</sub>@ECN-400 , (e) Cu@MoS<sub>2</sub>@ECN-600 and (f) Cu@MoS<sub>2</sub>@ECN-800.



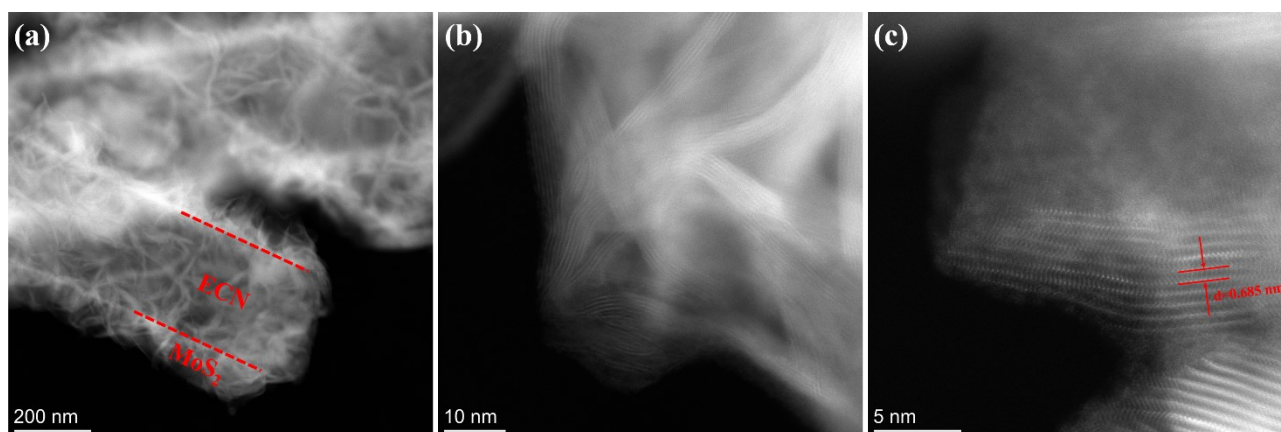
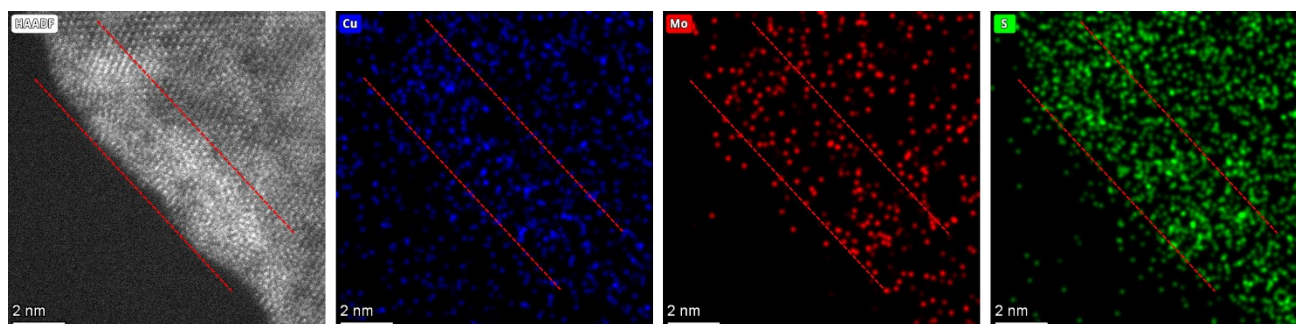
**Fig. S2** The element mapping image of the Cu@MoS<sub>2</sub>@ECN-600.



**Fig. S3** The EDS image of the Cu@MoS<sub>2</sub>@ECN-600.

**Table S1**The relative content of each element in the Cu@MoS<sub>2</sub>@ECN-600

Element	Mass proportion (%)	Atom proportion (%)
C	44.00±0.24	76.94±0.42
O	2.26±0.09	2.96±0.12
S	17.73±0.02	11.61±0.08
Cu	5.45±0.10	1.80±0.03
Mo	30.56±0.28	6.69±0.06
Total	100	100

**Fig. S4** The HAADF-STEM image of the Cu@MoS<sub>2</sub>@ECN-600.**Fig. S5** Aberration corrected HAADF-STEM Mapping image of the Cu@MoS<sub>2</sub>@ECN-600.