

Synthesis of the finger-like MoS₂@VS₂ micro-nano composite with enhanced field emission performance

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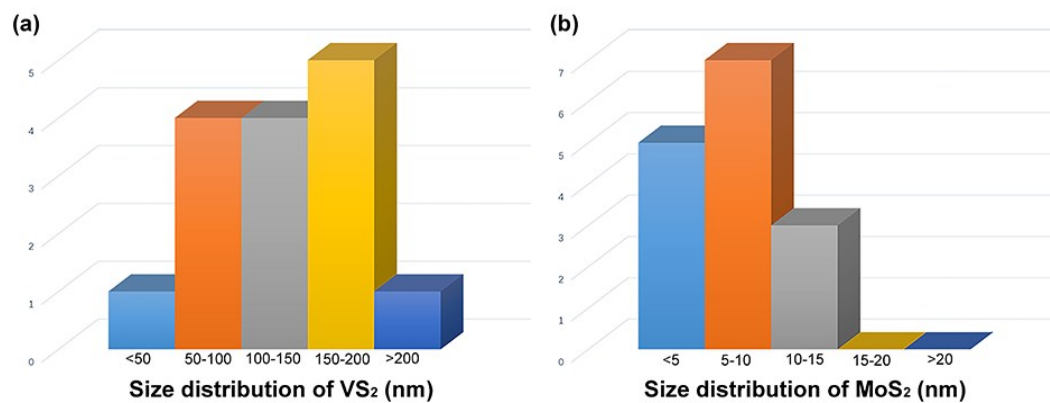


Figure S1. Size distribution of (a) the thickness for sheets based on the SEM image (Figure 2c) of finger-like VS₂, and (b) the thickness for MoS₂ petals based on the TEM image (Figure 3c) of MoS₂@VS₂ sample.

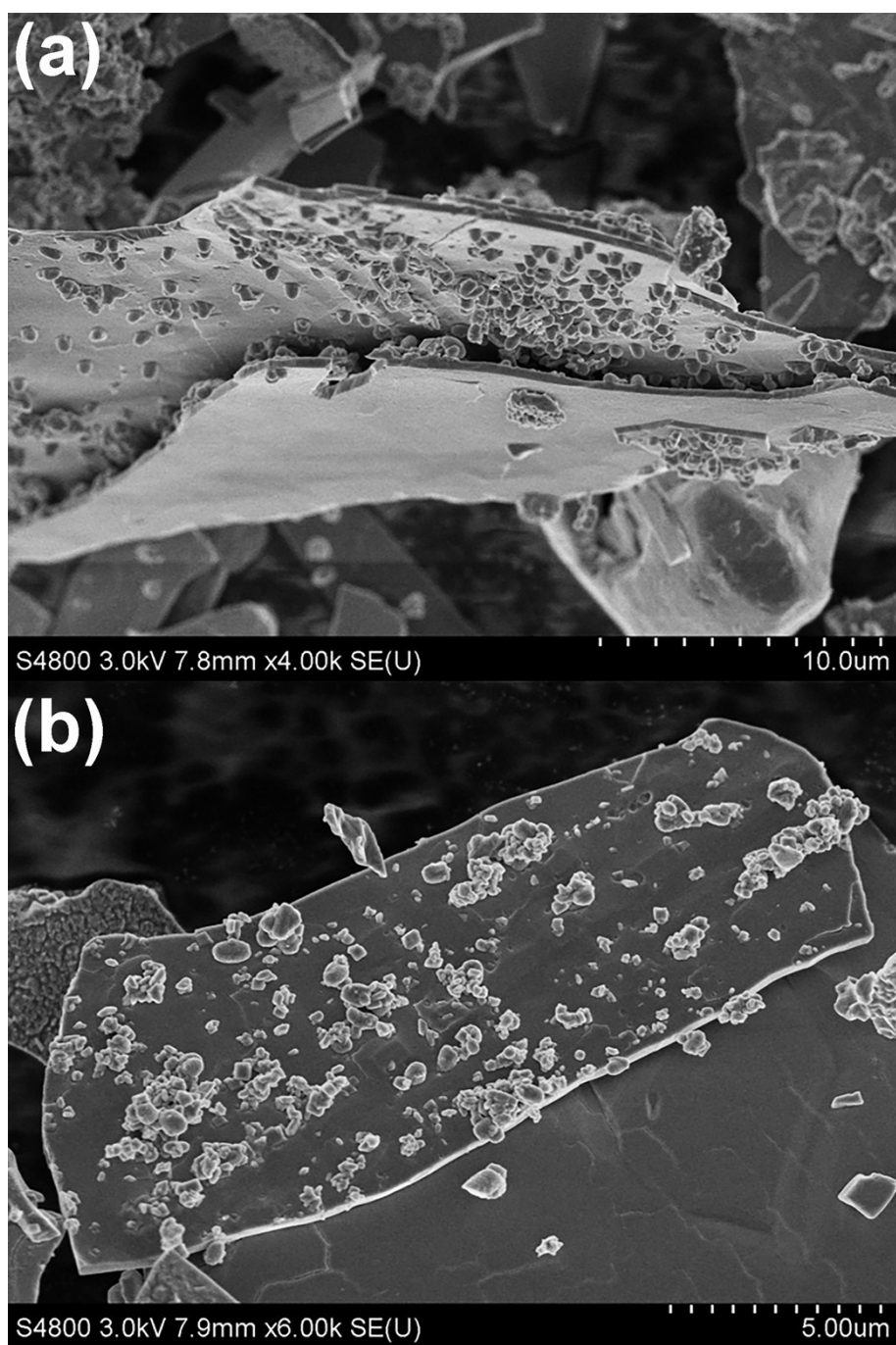


Figure S2. The intermediate state of the composite $\text{MoS}_2@\text{VS}_2$ sample, (a) side view, (b) top view.

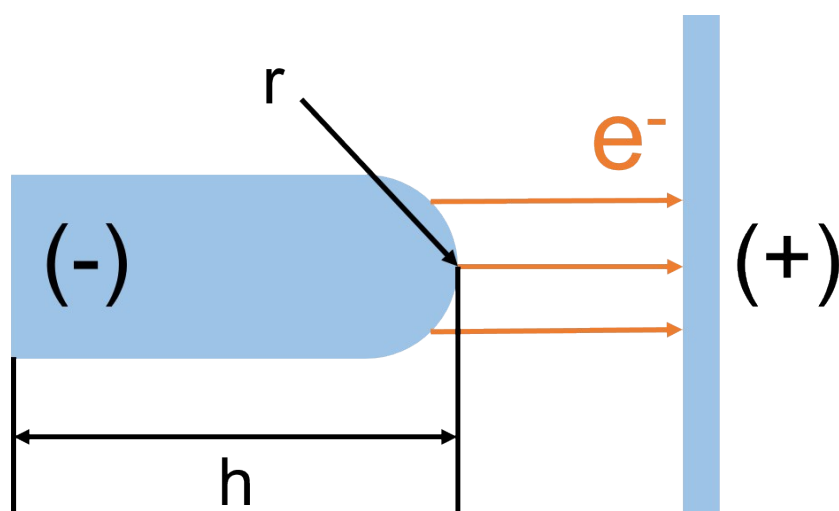


Figure S3. Illustration of the field emission center, h is the height and r is the radius of curvature.

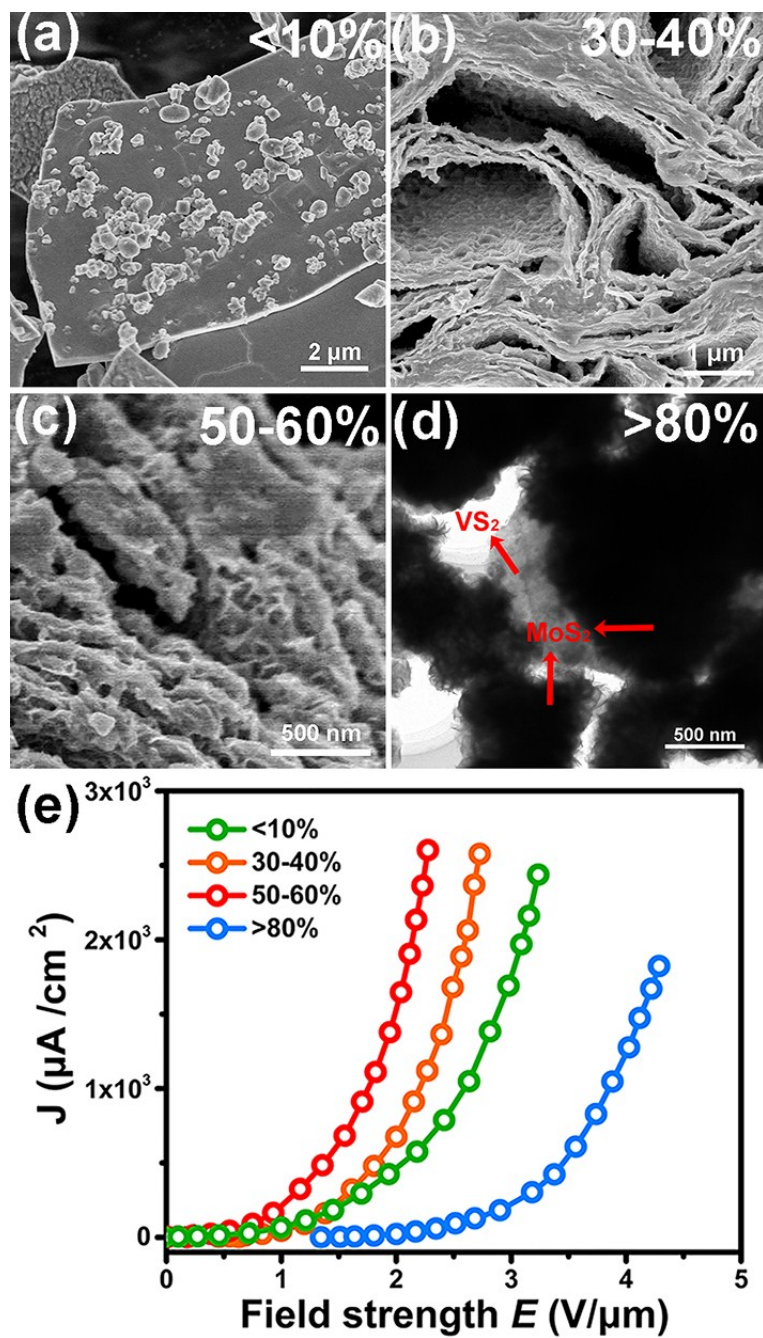


Figure S4. SEM images of MoS₂@VS₂ composite with different MoS₂ molar ratio content. (a) <10%, (b) 30-40%, and (c) 50-60%. (d) TEM image of MoS₂@VS₂ composite with >80% MoS₂ molar ratio content. (e) Field emission performance of four samples with different MoS₂ molar ratio content.

Table S1. Comparison of field emission materials and their key parameters.

Material	Turn-on field (V/ μ m)	Threshold field (V/ μ m)	Work function (eV)	Field-enhancement factor	Reference
VS ₂	4	5.01	6.01	2500	S1
Zn ₄ O ₄ /VS ₂	-	-	5.47	-	S2
Zn ₄ O ₃ S/VS ₂	-	-	3.16	-	S2
VS ₂	1.4	2.6	4.9	-	S3
VS ₂ /ZnO	1.2	2.2	-	-	S3
MoS ₂	-	3.5	-	1138	S4
MoS ₂	1.0	2.1	4.0	9880	S5
MoS ₂ /TiO ₂	-	11	-	-	S6
MoS ₂	2.5	3.3	5.39	5065	This work
VS ₂	1.6	2.6	4.9	7361	This work
MoS ₂ @VS ₂	0.8	1.6	4.41	10651	This work

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