

## Electronic Supplementary Information

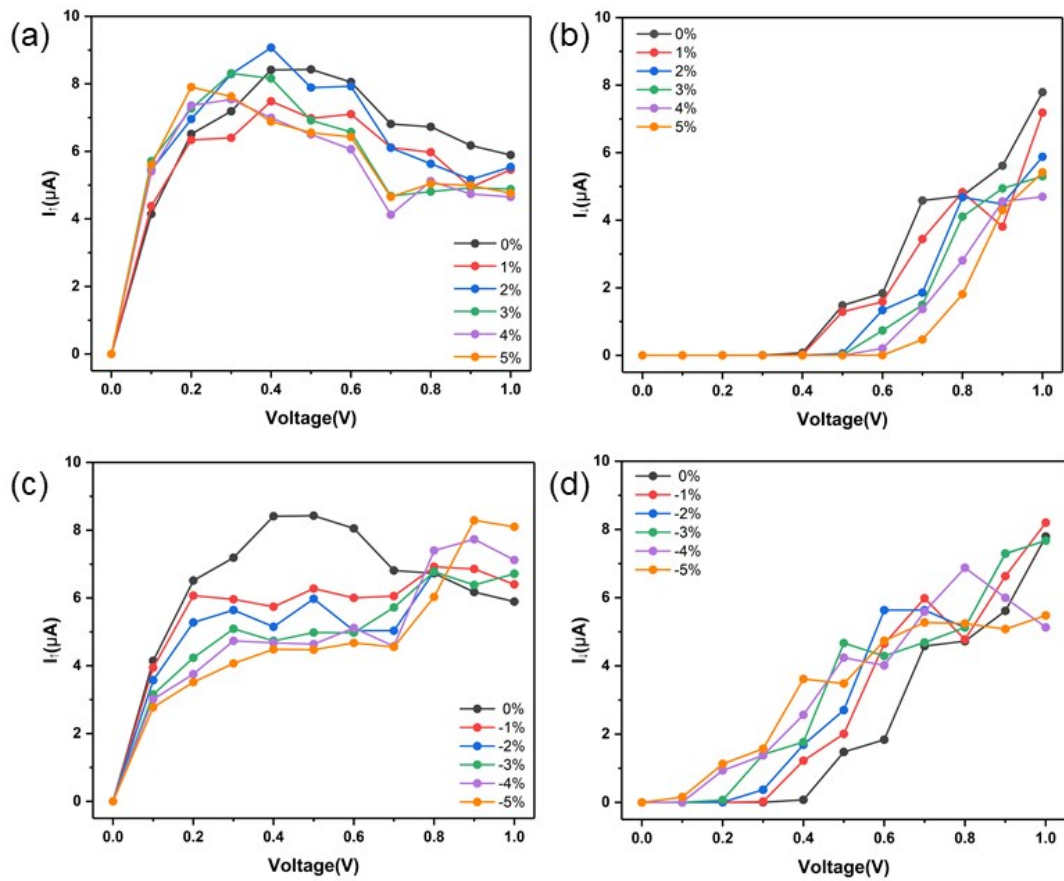
### **Enhanced robustness of half-metallicity in $VBr_3$ nanowires by strains and transition metal doping**

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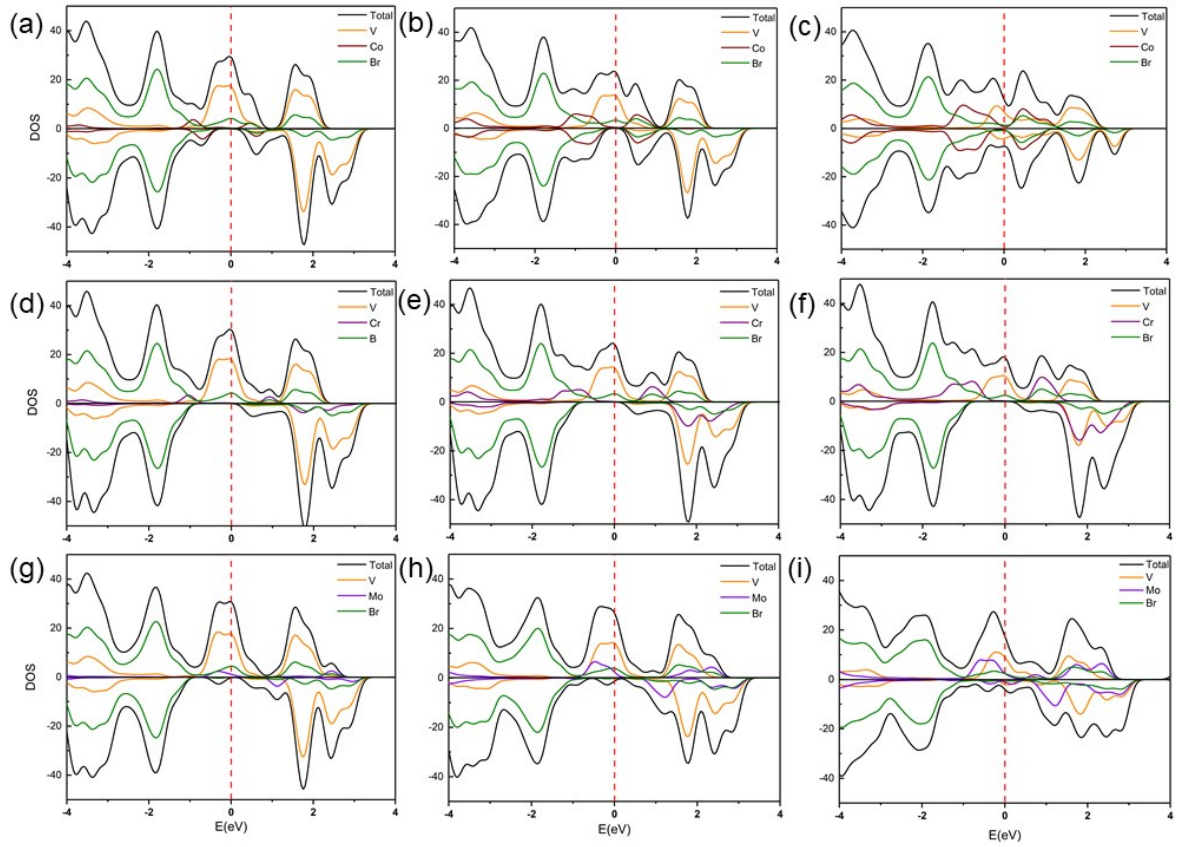
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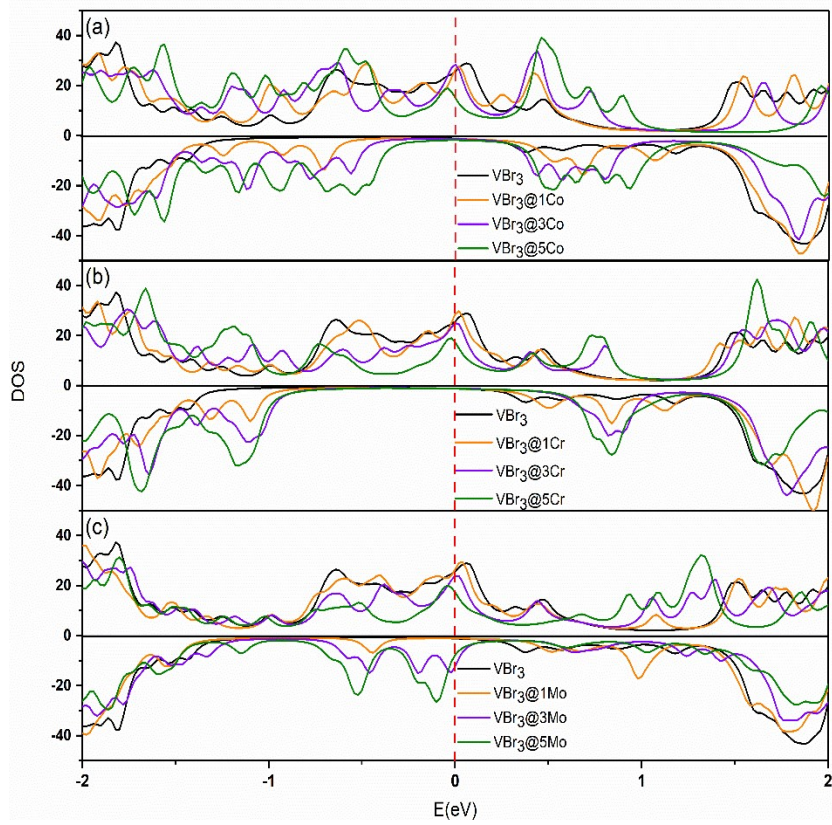
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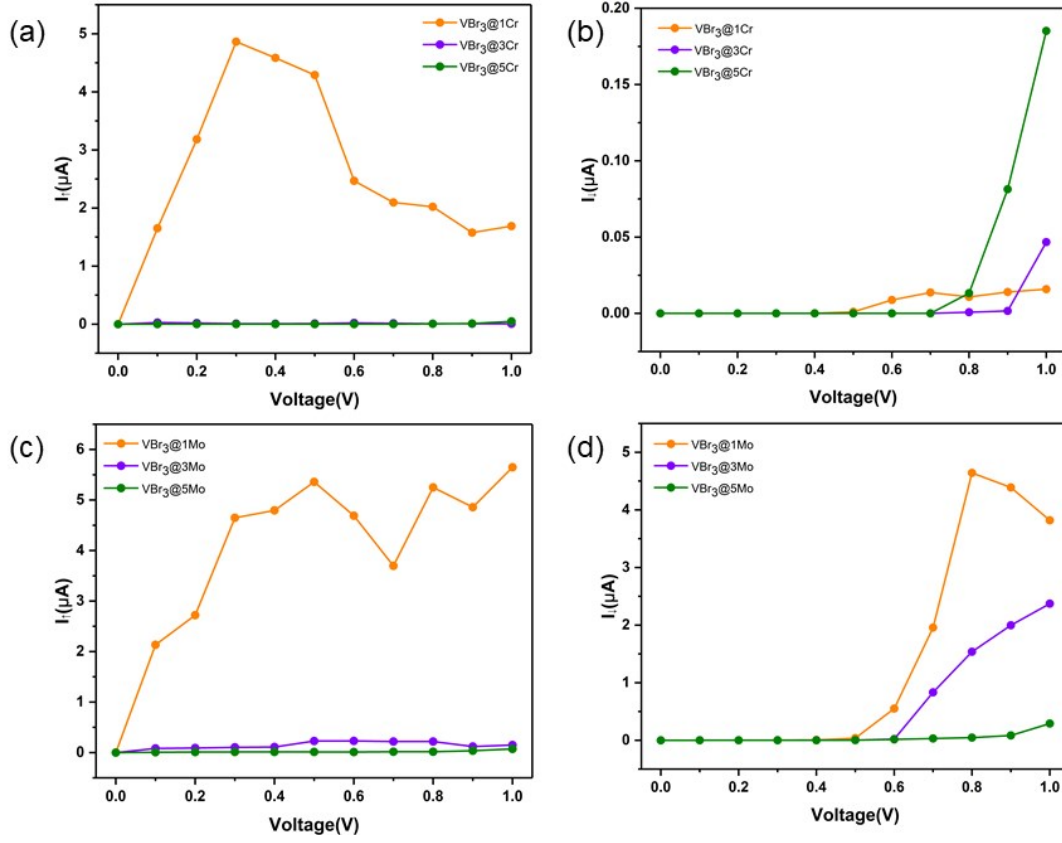
**Fig. S1** (a) Spin-up and (b) spin-down currents of  $\text{VBr}_3$  nanowires with tensile strains as a function of the applied bias. (c) Spin-up and (d) spin-down currents of  $\text{VBr}_3$  with compressive strains as a function of the applied bias.



**Fig. S2** Partial density of states (PDOS) of  $VBr_3$  nanowires doped with (a) 1, (b) 3, and (c) 5 Co atoms. PDOS of  $VBr_3$  nanowires doped with (d) 1, (e) 3, and (f) 5 Cr atoms. PDOS of  $VBr_3$  nanowires doped with (g) 1, (h) 3, and (i) 5 Mo atoms.



**Fig. S3** Partial density of states (PDOS) of  $VBr_3$  nanowires doped with (a) Co, (b) Cr, and (c) Mo in two-probe systems.



**Fig. S4** (a) Spin-up and (b) spin-down currents of Cr-doped  $\text{VBr}_3$  nanowires. (c) Spin-up and (d) spin-down currents of Mo-doped  $\text{VBr}_3$  nanowires.