

# **The atomistic insights of chemical complexity effect on irradiation resistance of high entropy alloys**

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## **Supplementary Information**

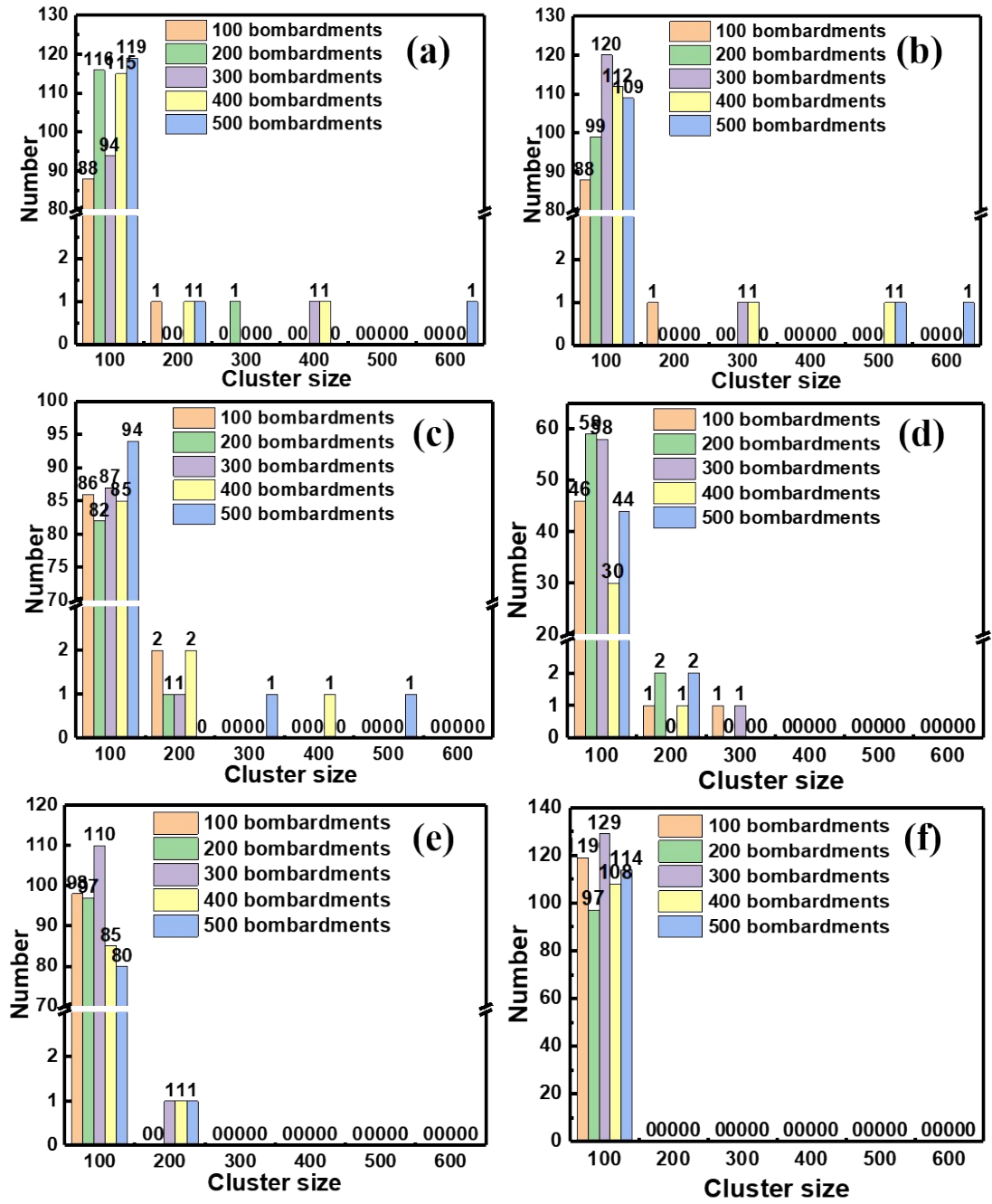


Figure S1. The sizes of defect cluster during the bombardment of six FCC materials. (a)-(f) are Ni, FeNi, CrFeNi, CoCrFeNi, CoCrCuFeNi and CoCrFeMnNi, respectively.

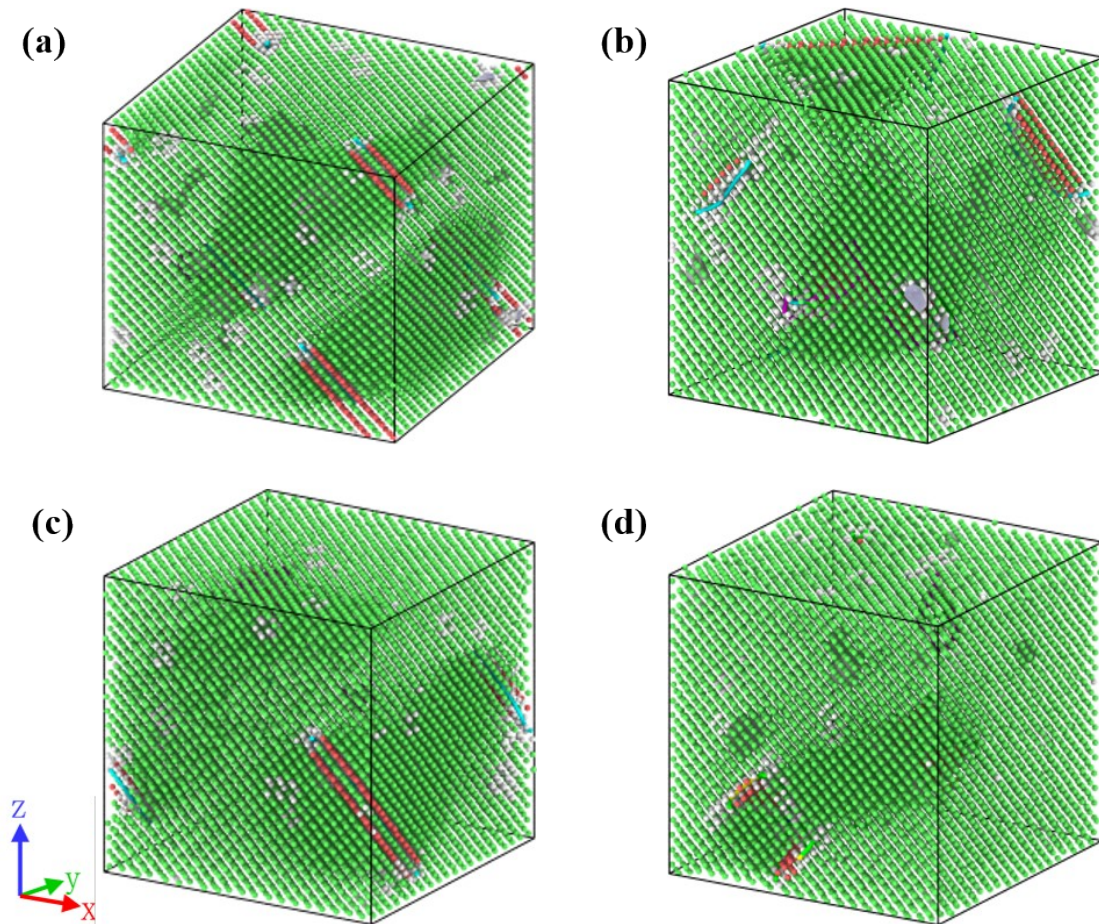


Figure S2. The distribution of stacking fault atoms after 500 times of bombardment. (a)-(d) are Ni, FeNi, CrFeNi and CoCrFeNi, respectively. The red, white dots are the stacking fault atoms and other atoms, respectively. Green, blue, yellow, purple, light blue lines represent  $1/6\langle 112 \rangle$ Shockley,  $1/2\langle 112 \rangle$ Perfect,  $1/3\langle 001 \rangle$ Hirth,  $1/6\langle 110 \rangle$ Stair-rod and  $1/3\langle 111 \rangle$ Frank dislocation, respectively.

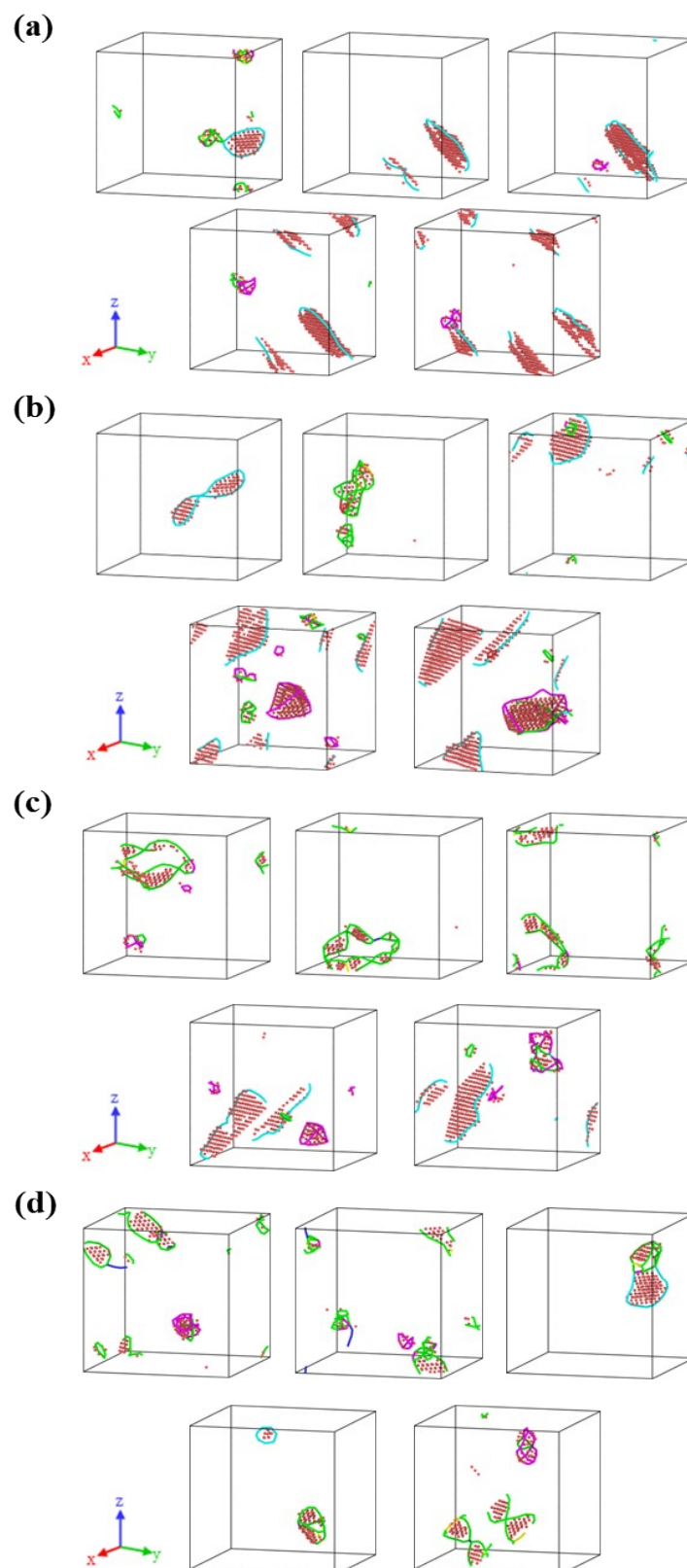


Figure S3. The dislocation and atomic distribution of stacking faults during the bombardments. (a)-(d) are Ni, FeNi, CrFeNi and CoCrFeNi, respectively. There is an interval of 100 times of bombardment between adjacent pictures. The dots and lines represent the same meaning with Figure S2.