

Supplementary Information

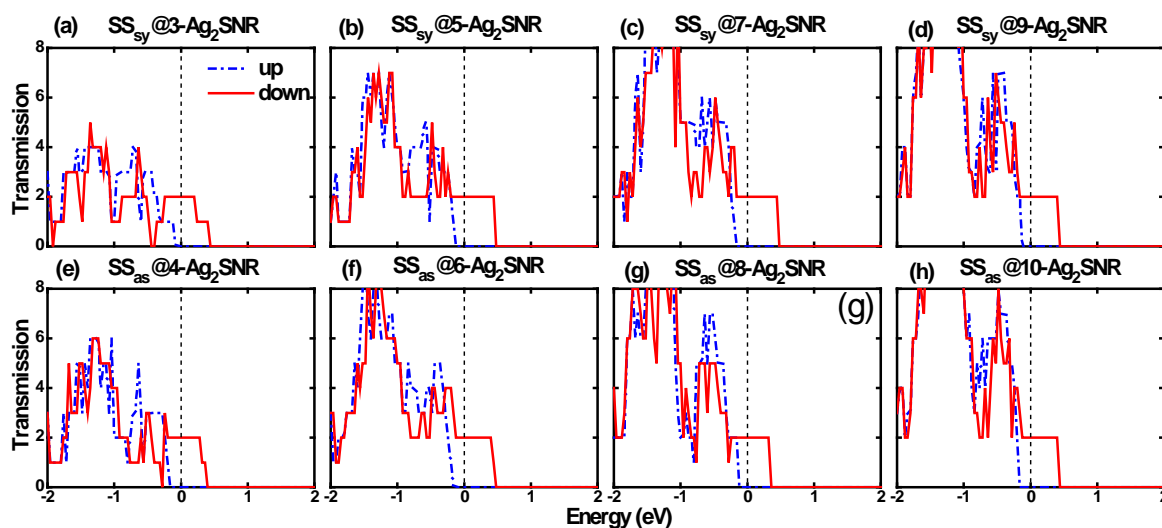


Fig. S1 (a)-(h) Transmissions of SS_{sy}@3-Ag₂SNR, SS_{sy}@5-Ag₂SNR, SS_{sy}@7-Ag₂SNR, SS_{sy}@9-Ag₂SNR, SS_{as}@4-Ag₂SNR, SS_{as}@6-Ag₂SNR, SS_{as}@8-Ag₂SNR and SS_{as}@10-Ag₂SNR, respectively. The blue dashed dot line denotes the spin up transmission, and red solid line denotes spin down one.

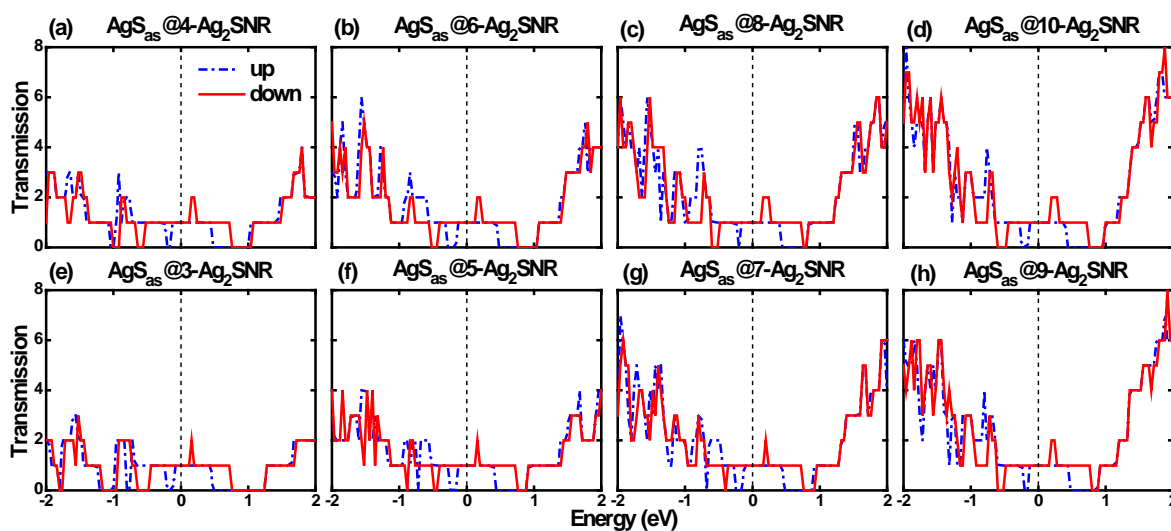


Fig. S2 (a)-(h) Transmissions of AgS_{as}@4-Ag₂SNR, AgS_{as}@6-Ag₂SNR, AgS_{as}@8-Ag₂SNR, AgS_{as}@10-Ag₂SNR, AgS_{sy}@3-Ag₂SNR, AgS_{sy}@5-Ag₂SNR, AgS_{sy}@7-Ag₂SNR and AgS_{sy}@9-Ag₂SNR, respectively. The blue dashed dot line denotes the spin up transmission, and red solid line denotes spin down one.

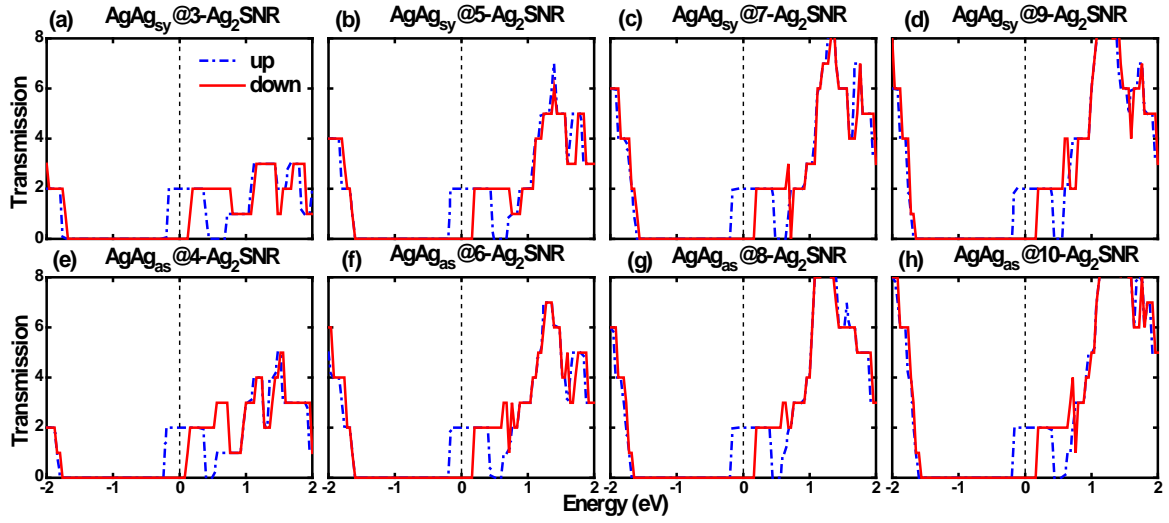


Fig. S3 (a)-(h) Transmissions of $\text{AgAg}_{\text{sy}}@3\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{sy}}@5\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{sy}}@7\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{sy}}@9\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{as}}@4\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{as}}@6\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{as}}@8\text{-Ag}_2\text{SNR}$ and $\text{AgAg}_{\text{as}}@10\text{-Ag}_2\text{SNR}$, respectively. The blue dashed dot line denotes the spin up transmission, and red solid line denotes spin down one.

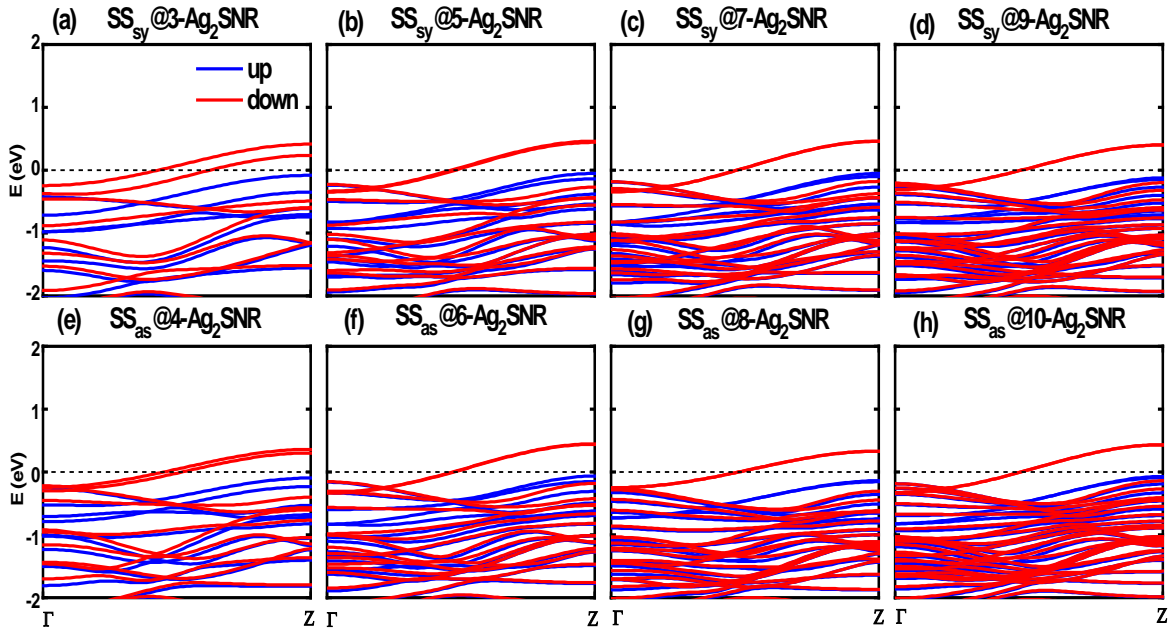


Fig. S4 (a)-(h) Band structures of $\text{SS}_{\text{sy}}@3\text{-Ag}_2\text{SNR}$, $\text{SS}_{\text{sy}}@5\text{-Ag}_2\text{SNR}$, $\text{SS}_{\text{sy}}@7\text{-Ag}_2\text{SNR}$, $\text{SS}_{\text{sy}}@9\text{-Ag}_2\text{SNR}$, $\text{SS}_{\text{as}}@4\text{-Ag}_2\text{SNR}$, $\text{SS}_{\text{as}}@6\text{-Ag}_2\text{SNR}$, $\text{SS}_{\text{as}}@8\text{-Ag}_2\text{SNR}$ and $\text{SS}_{\text{as}}@10\text{-Ag}_2\text{SNR}$, respectively. The blue solid line denotes the spin up bands, and red solid line denotes spin down one.

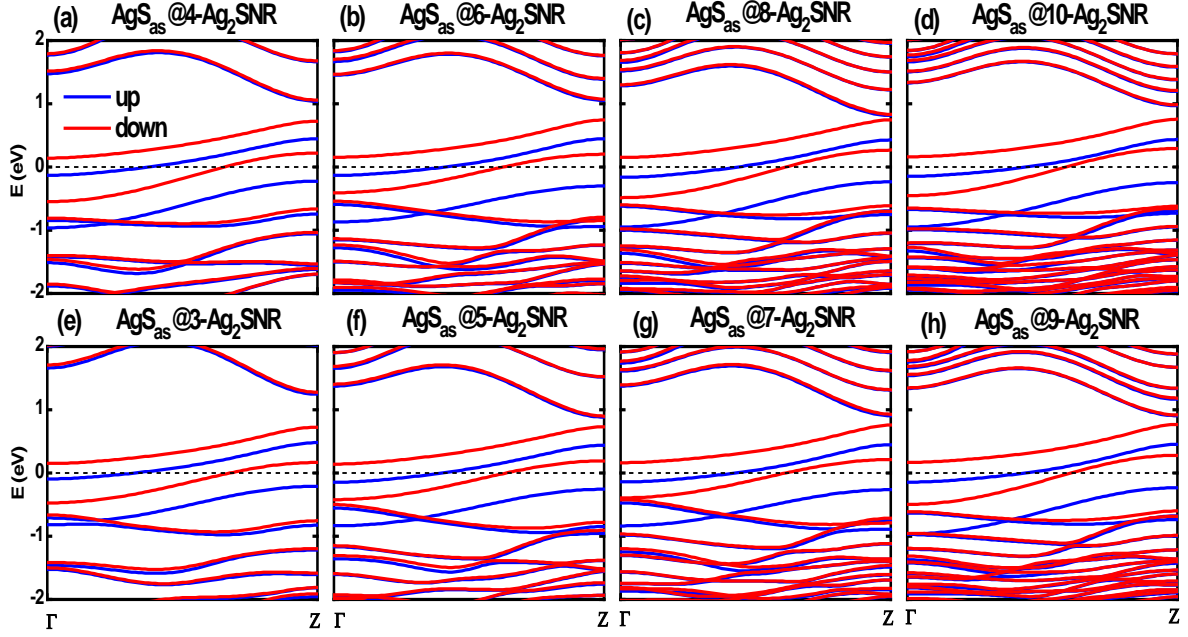


Fig. S5 (a)-(h) Band structures of $\text{AgS}_{\text{as}}@4\text{-Ag}_2\text{SNR}$, $\text{AgS}_{\text{as}}@6\text{-Ag}_2\text{SNR}$, $\text{AgS}_{\text{as}}@8\text{-Ag}_2\text{SNR}$, $\text{AgS}_{\text{as}}@10\text{-Ag}_2\text{SNR}$, $\text{AgS}_{\text{sy}}@3\text{-Ag}_2\text{SNR}$, $\text{AgS}_{\text{sy}}@5\text{-Ag}_2\text{SNR}$, $\text{AgS}_{\text{sy}}@7\text{-Ag}_2\text{SNR}$ and $\text{AgS}_{\text{sy}}@9\text{-Ag}_2\text{SNR}$, respectively. The blue solid line denotes the spin up bands, and red solid line denotes spin down one.

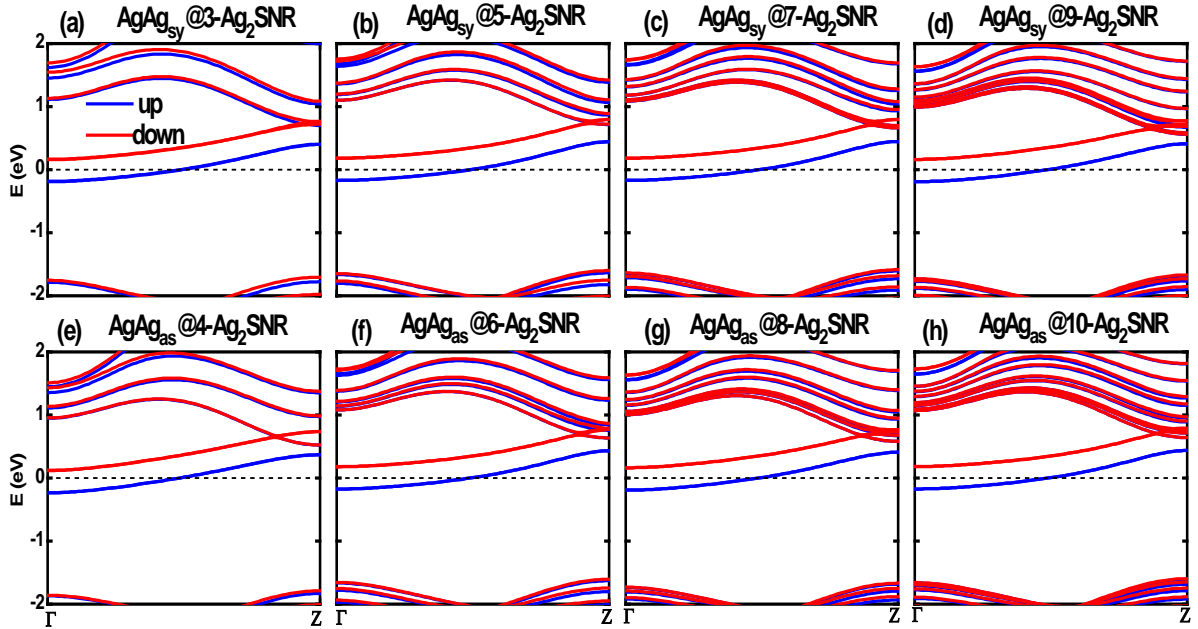


Fig. S6 (a)-(h) Band structures of $\text{AgAg}_{\text{sy}}@3\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{sy}}@5\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{sy}}@7\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{sy}}@9\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{as}}@4\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{as}}@6\text{-Ag}_2\text{SNR}$, $\text{AgAg}_{\text{as}}@8\text{-Ag}_2\text{SNR}$ and $\text{AgAg}_{\text{as}}@10\text{-Ag}_2\text{SNR}$, respectively. The blue solid line denotes the spin up bands, and red solid line denotes spin down one.

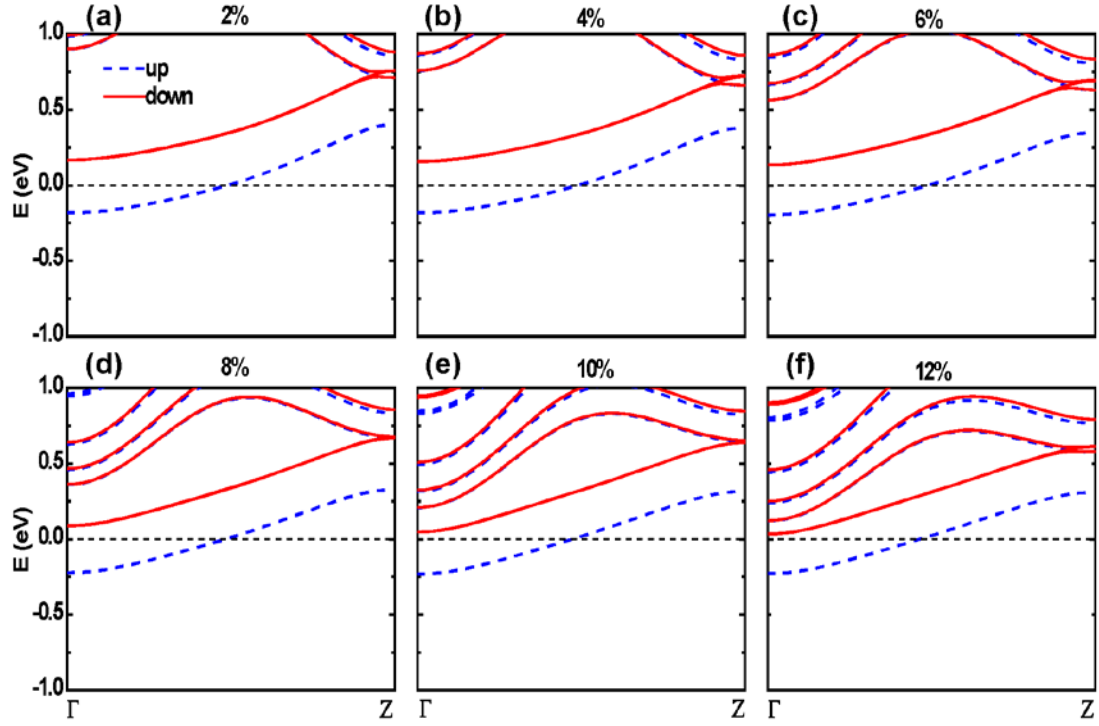


Fig. S7 (a)-(f) The band structures of $\text{AgAg}_{\text{sy}}@5\text{-Ag}_2\text{SNR}$ under the applied tensile strains (from 2% to 12%). The blue dashed line denotes the spin up band structure, and the red solid line denotes the spin down one. The Fermi level (E_F) is set to 0.

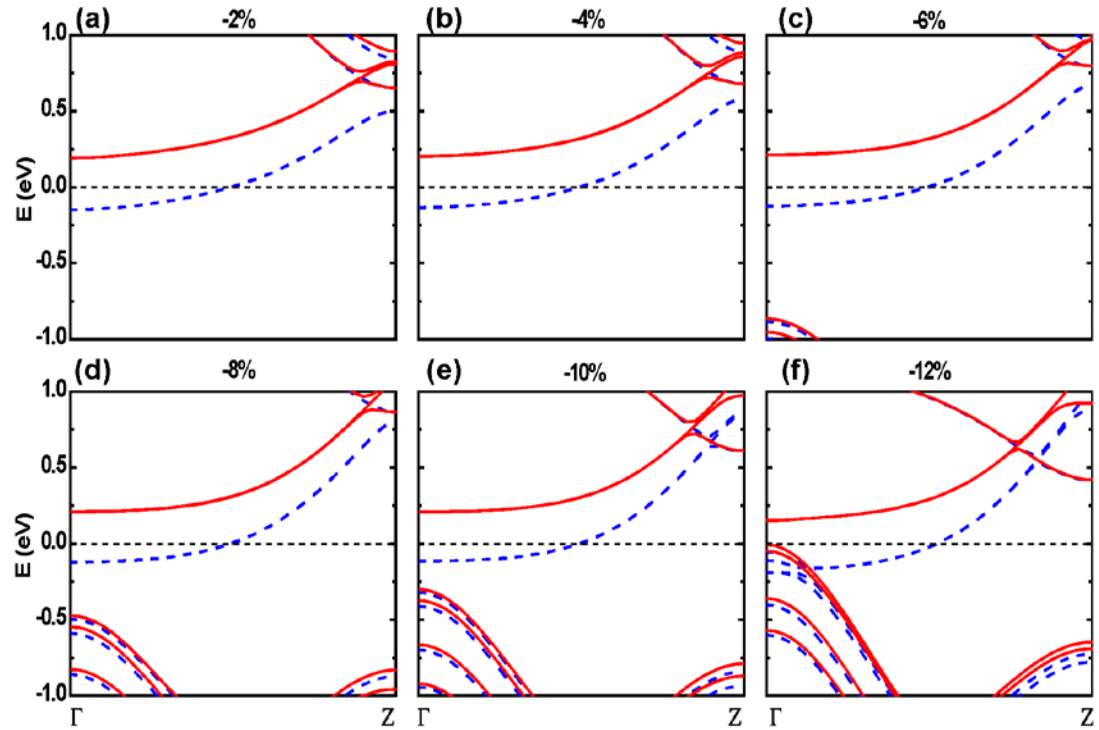


Fig. S8 (a)-(f) The band structures of $\text{AgAg}_{\text{sy}}@5\text{-Ag}_2\text{SNR}$ under the applied compressive strains (from -2% to -12%). The blue dashed line denotes the spin up band structure, and the red solid line denotes the spin down one. The Fermi level (E_F) is set to 0.

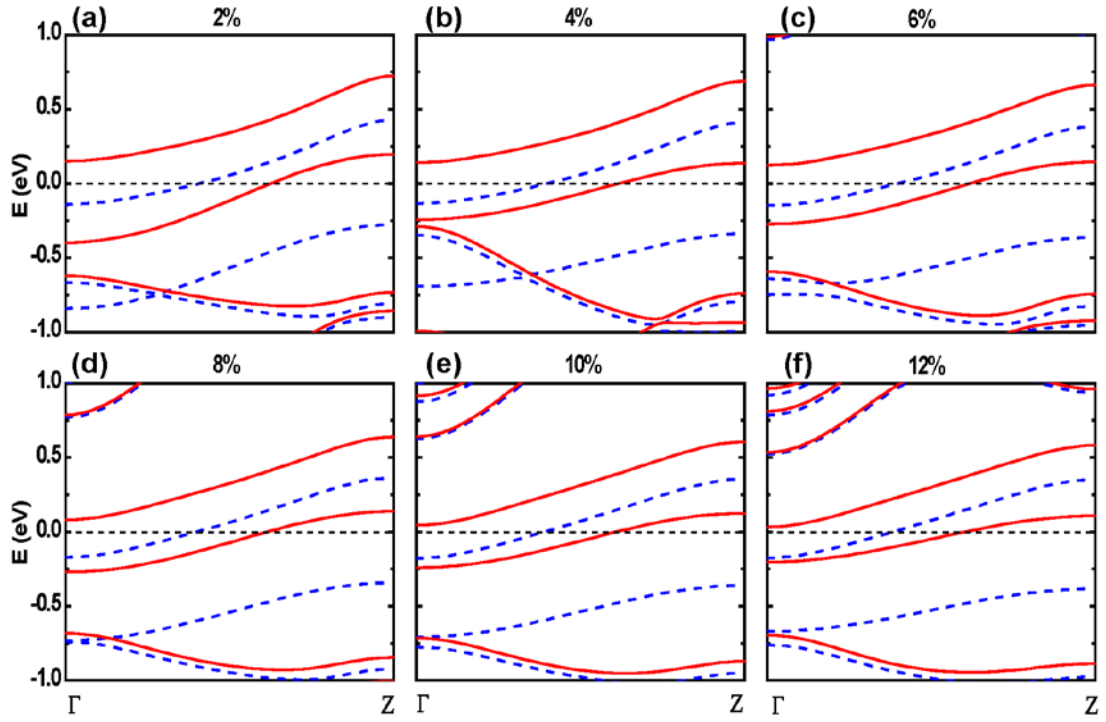


Fig. S9 (a)-(f) The band structures of $\text{AgS}_{\text{as}}@6\text{-Ag}_2\text{SNR}$ under the applied tensile strains (from 2% to 12%). The blue dashed line denotes the spin up band structure, and the red solid line denotes the spin down one. The Fermi level (E_F) is set to 0.

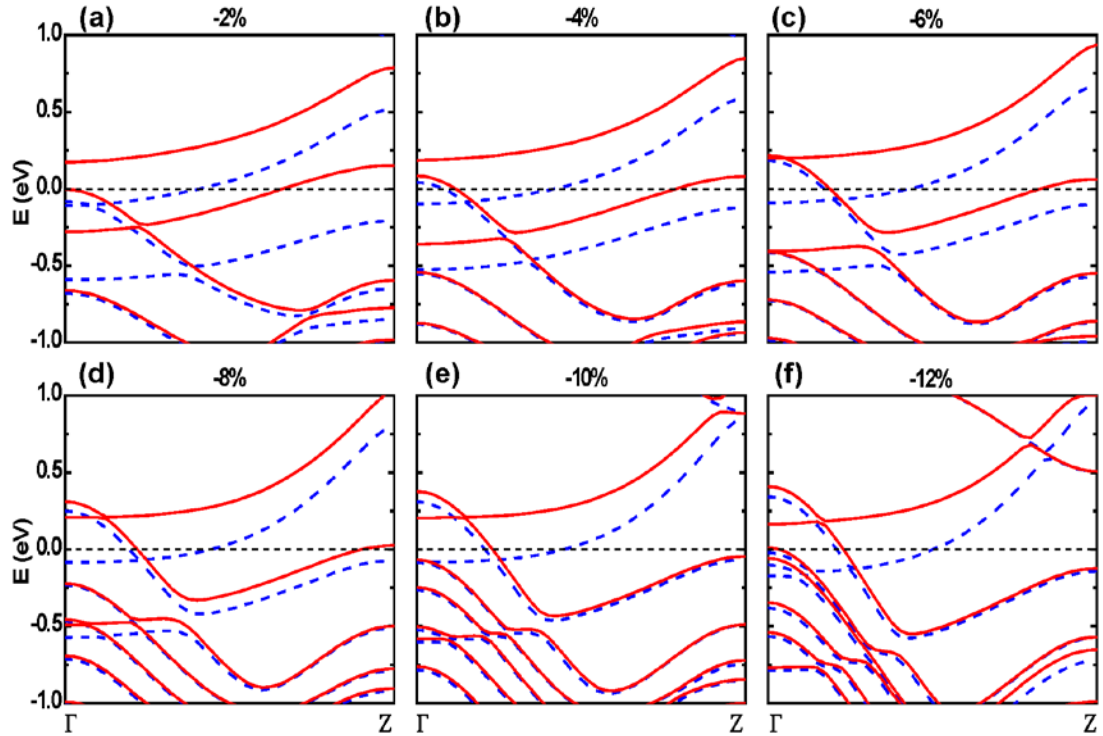


Fig. S10 (a)-(f) The band structures of $\text{AgS}_{\text{as}}@6\text{-Ag}_2\text{SNR}$ under the applied compressive strains (from -2% to -12%). The blue dashed line denotes the spin up band structure, and the red solid line denotes the spin down one. The Fermi level (E_F) is set to 0.

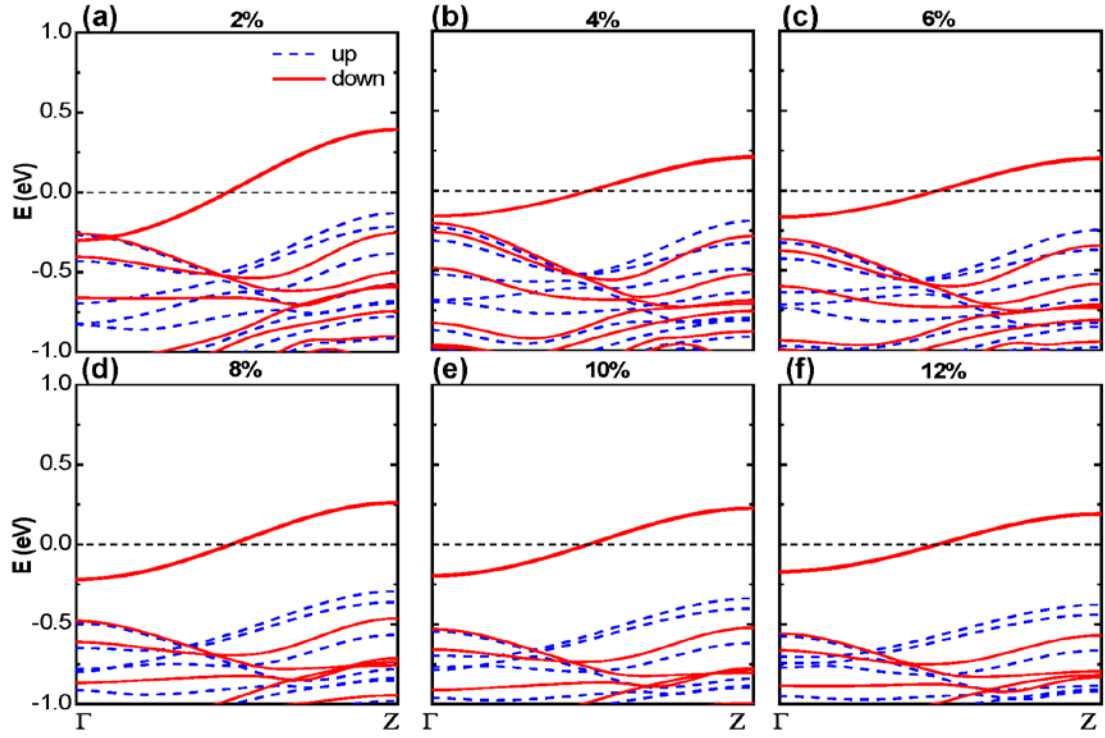


Fig. S11 (a)-(f) The band structures of $SS_{as}@6-Ag_2SNR$ under the applied tensile strains (from 2% to 12%). The blue dashed line denotes the spin up band structure, and the red solid line denotes the spin down one. The Fermi level (E_F) is set to 0.

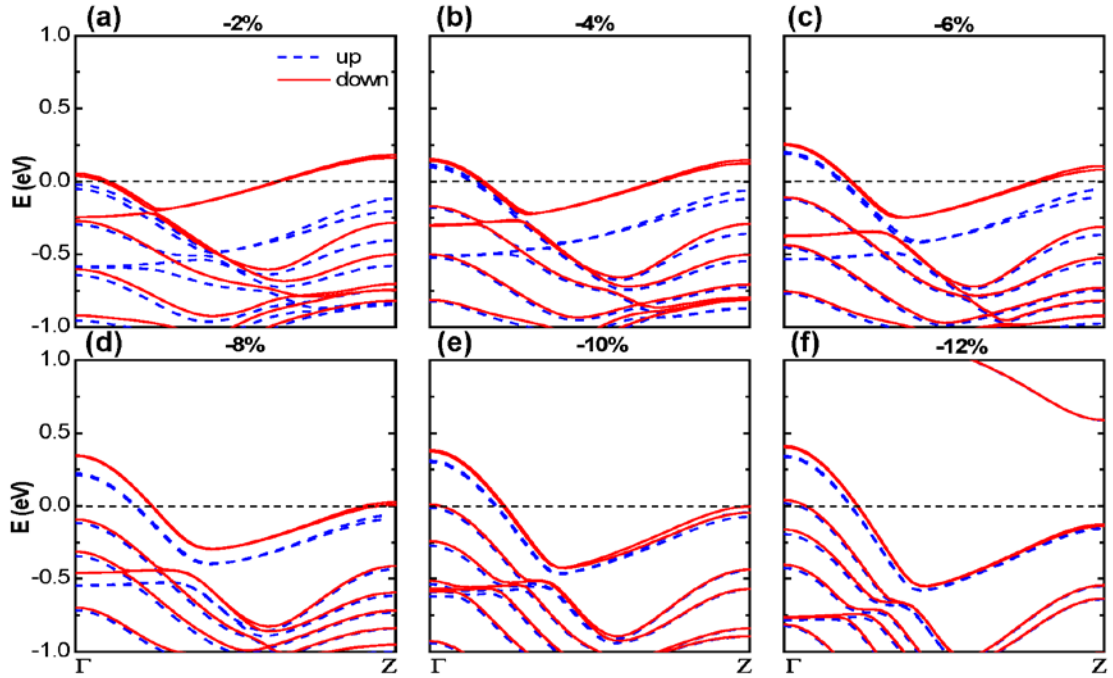


Fig. S12 (a)-(f) The band structures of $SS_{as}@6-Ag_2SNR$ under the applied compressible strains (from -2% to -12%). The blue dashed line denotes the spin up band structure, and the red solid line denotes the spin down one. The Fermi level (E_F) is set to 0.