

## Supporting information

### How do organic gold compounds and organic halogen molecules interact? Comparison with hydrogen bonds

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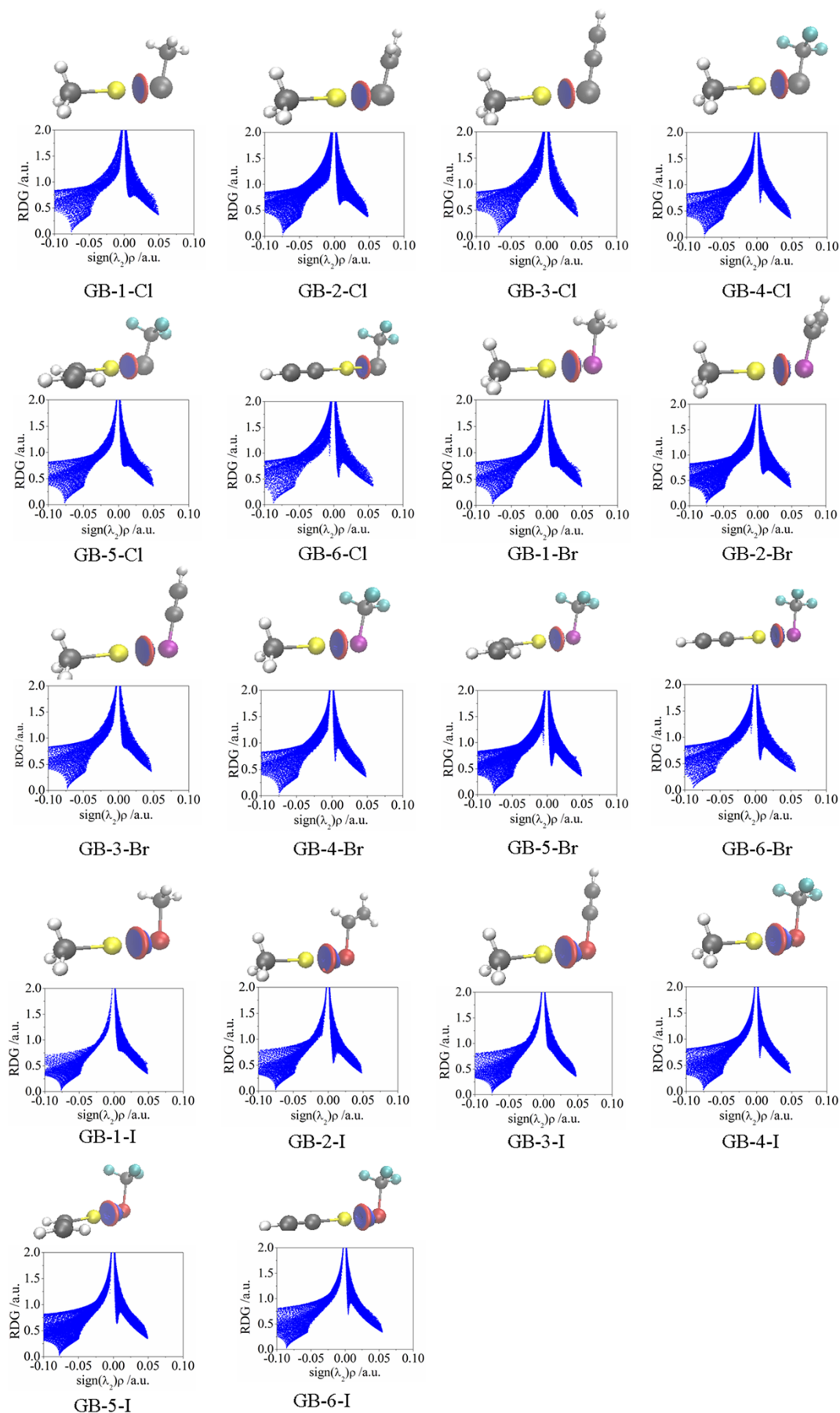
#### Figure list

**Fig. S1.** Gradient isosurfaces ( $s=0.1$  au) and plots of the reduced density gradient (RDG) versus the electron density multiplied by the sign of the second Hessian eigenvalue in GBs.

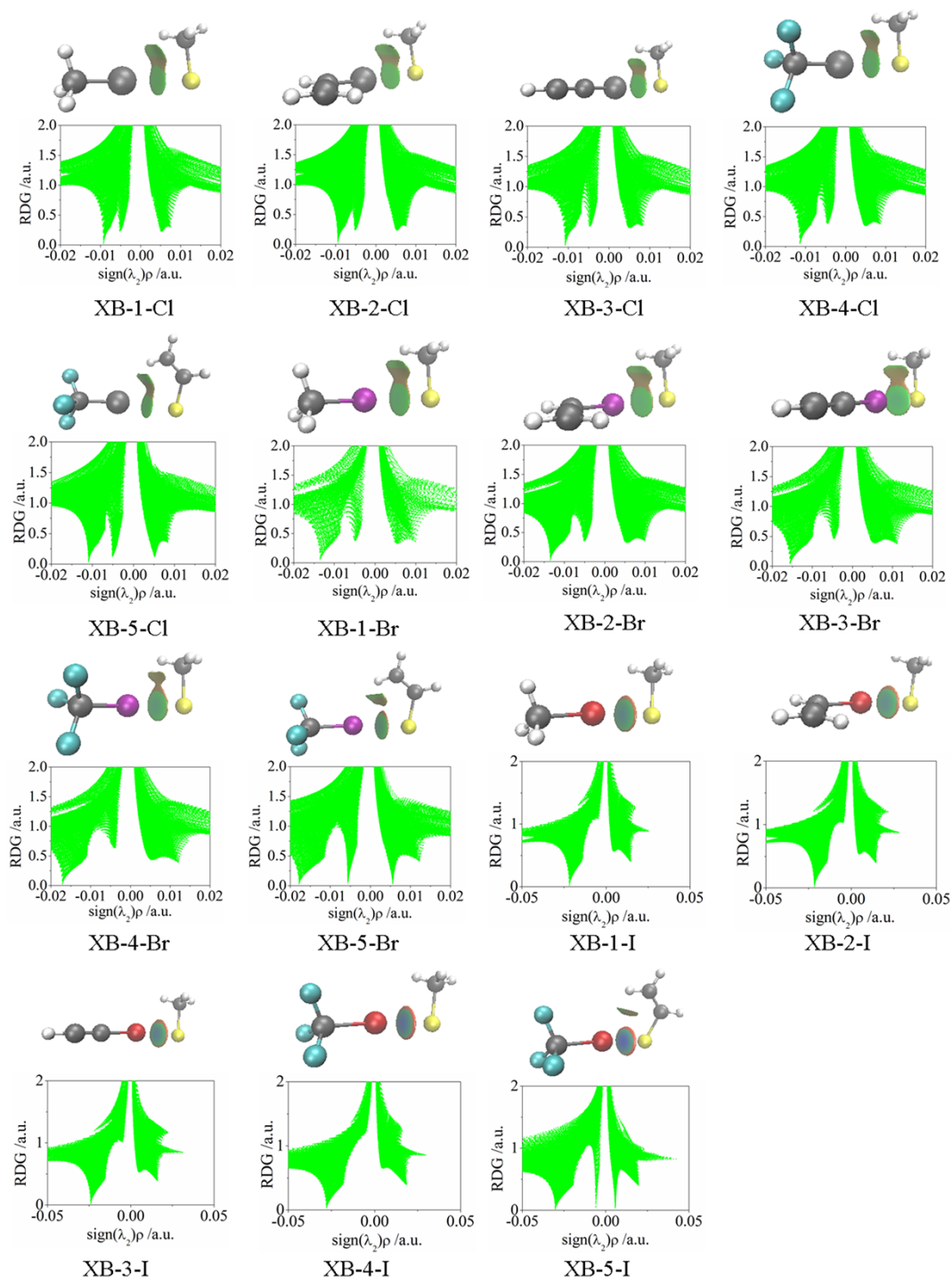
**Fig. S2.** Gradient isosurfaces ( $s=0.1$  au) and plots of the reduced density gradient (RDG) versus the electron density multiplied by the sign of the second Hessian eigenvalue in XBs.

**Fig. S3.** Electron density differences of GBs ( $\text{iso}=0.002$ ) in all systems. Red regions indicate increased electron density, while blue regions represent decreased electron density.

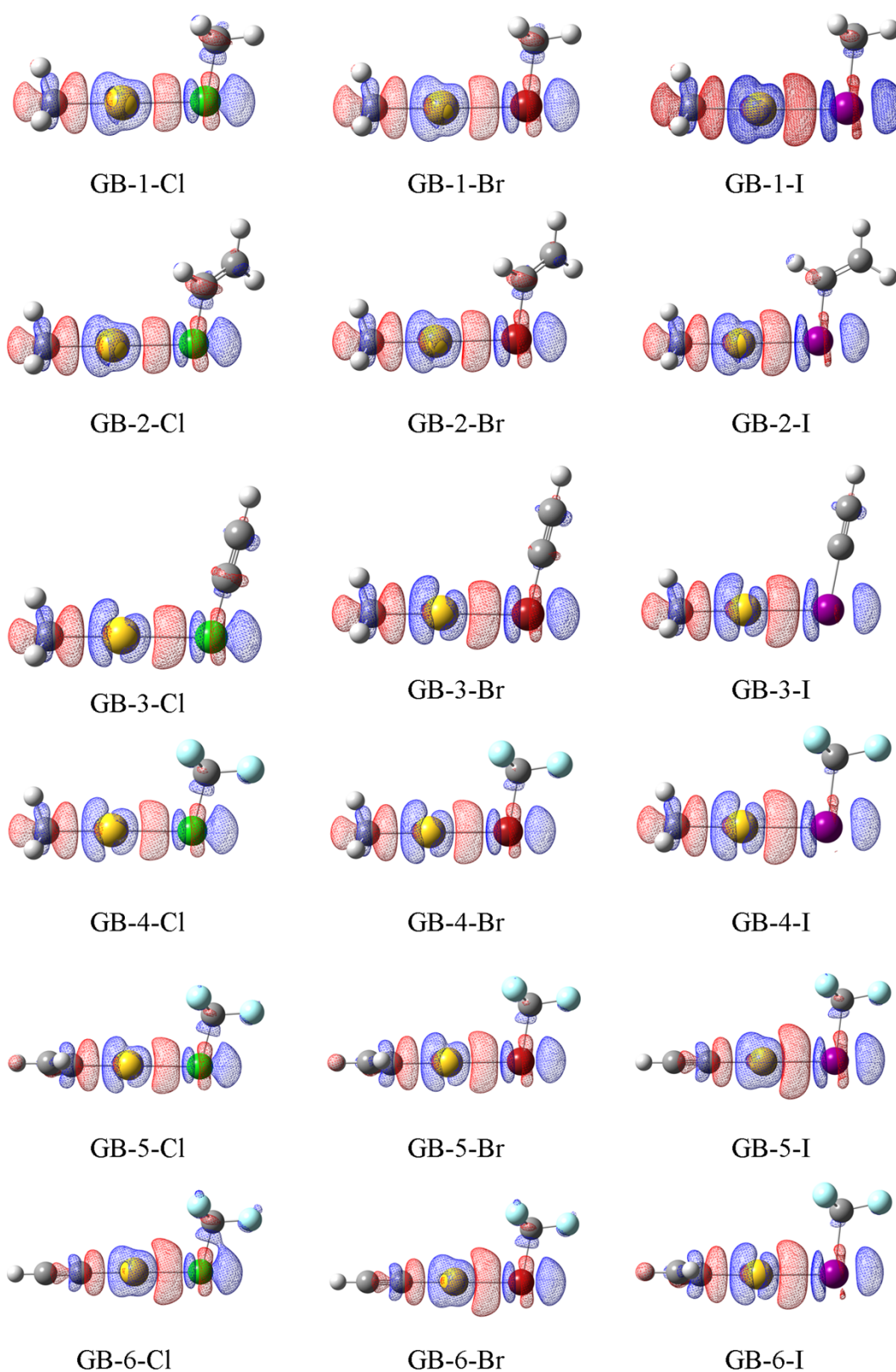
**Fig. S4.** Electron density differences of XBs ( $\text{iso}=0.0002$ ) in all systems. Red regions indicate increased electron density, while blue regions represent decreased electron density.



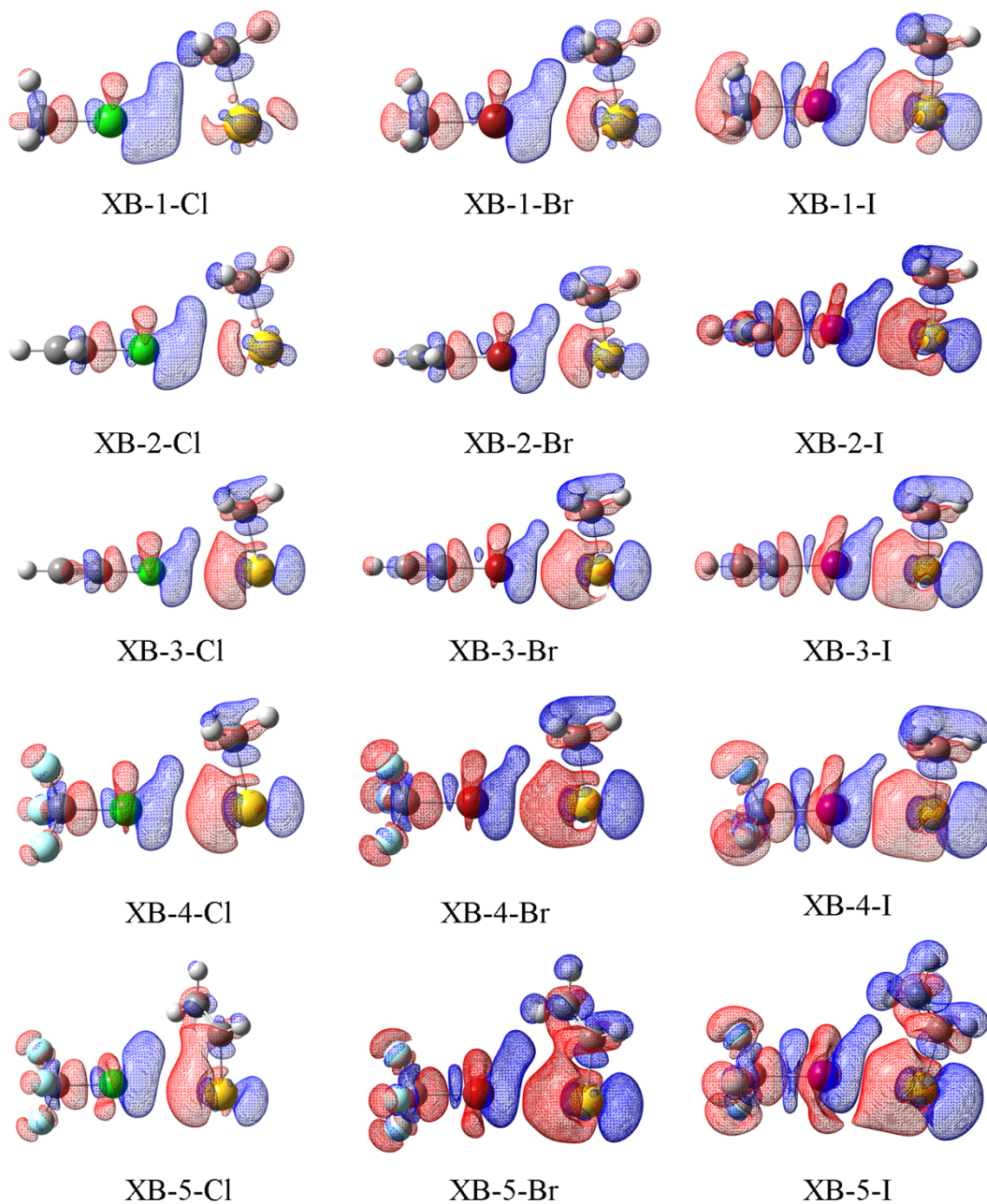
**Fig. S1.** Gradient isosurfaces ( $s=0.1$  au) and plots of the reduced density gradient (RDG) versus the electron density multiplied by the sign of the second Hessian eigenvalue in GBs.



**Fig. S2.** Gradient isosurfaces ( $s=0.1$  au) and plots of the reduced density gradient (RDG) versus the electron density multiplied by the sign of the second Hessian eigenvalue in XB-1-Br.



**Fig. S3.** Electron density differences of GBs (iso=0.002) in all systems. Red regions indicate increased electron density, while blue regions represent decreased electron density.



**Fig. S4.** Electron density differences of XBs (iso=0.0002) in all systems. Red regions indicate increased electron density, while blue regions represent decreased electron density.