



**Figure S1.** Variation of the interaction energy of the water dimer, methane-water and methane-fluoromethane complex and its components with the  $\angle \text{O-H}\cdots\text{O}$ ,  $\angle \text{C-H}\cdots\text{O}$  and  $\angle \text{C-H}\cdots\text{F}$  angles. The following symbols are used to indicate each IMPT component:  $\circ$  for the electrostatic,  $\triangle$  for the exchange-repulsion,  $\textcolor{purple}{\times}$  for the polarization,  $\nabla$  for the charge-transfer, and  $\square$  for the dispersion one). The total interaction energy ( $\bullet$ , obtained by adding all components) and the sum of the electrostatic and dispersion components ( $\blacksquare$ ) are also given for comparison.