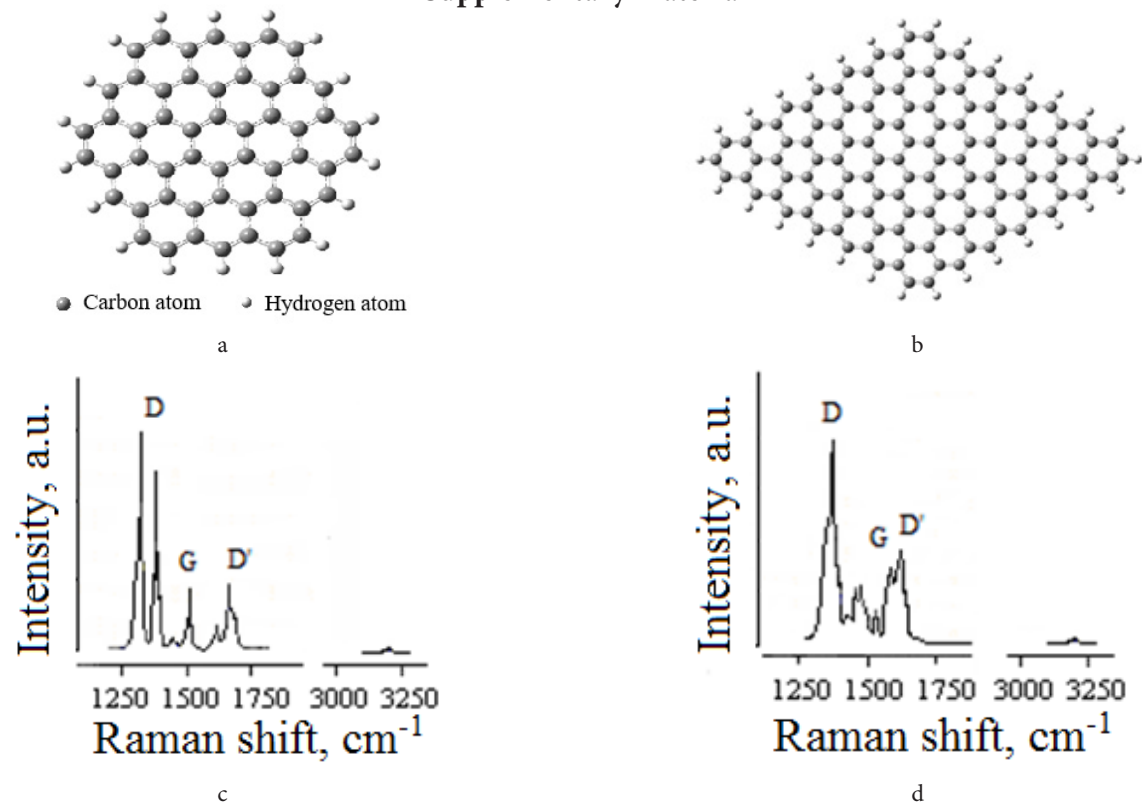
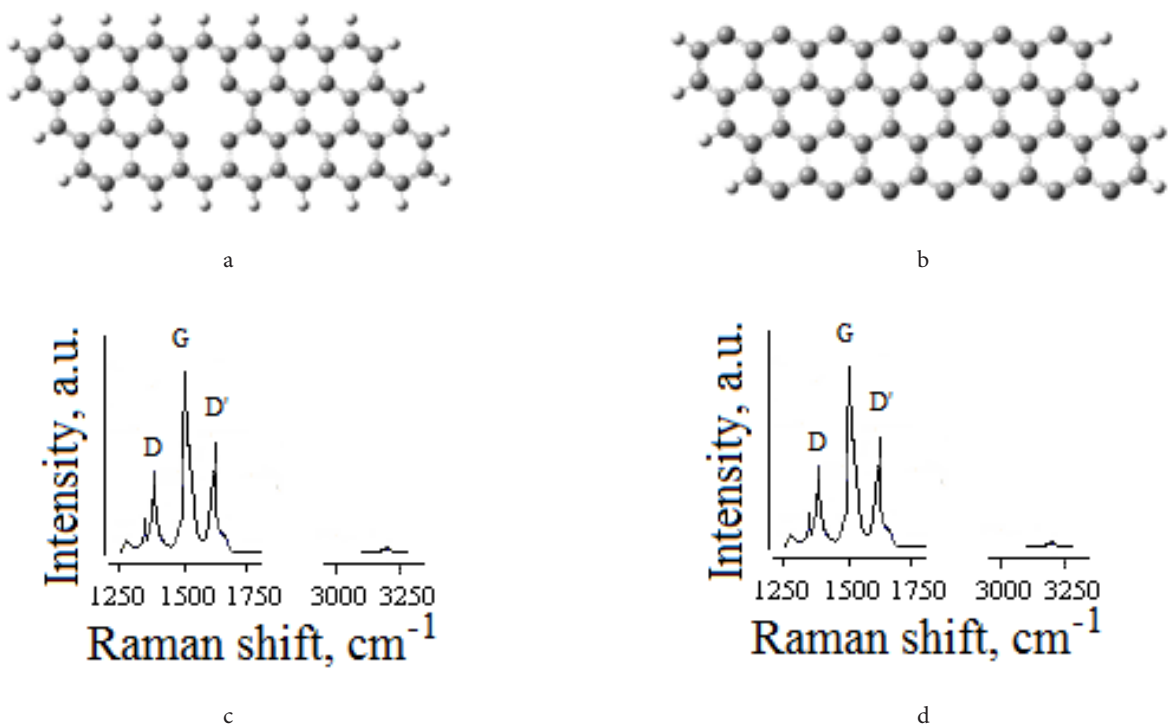


## Supplementary Material



**Fig. S1.** Molecular models of graphene sheet in the form of hexagon (a) and rhombus (b). Their Raman spectra: hexagon (c) and rhombus (d).



**Fig. S2.** Molecular models of graphene sheet with vacancy defect inside the graphene sheet (a) and the boundary defect due to the absence of hydrogen atoms (b). Their Raman spectra: defect inside the graphene sheet (c) and without hydrogen atoms at two borders (d).