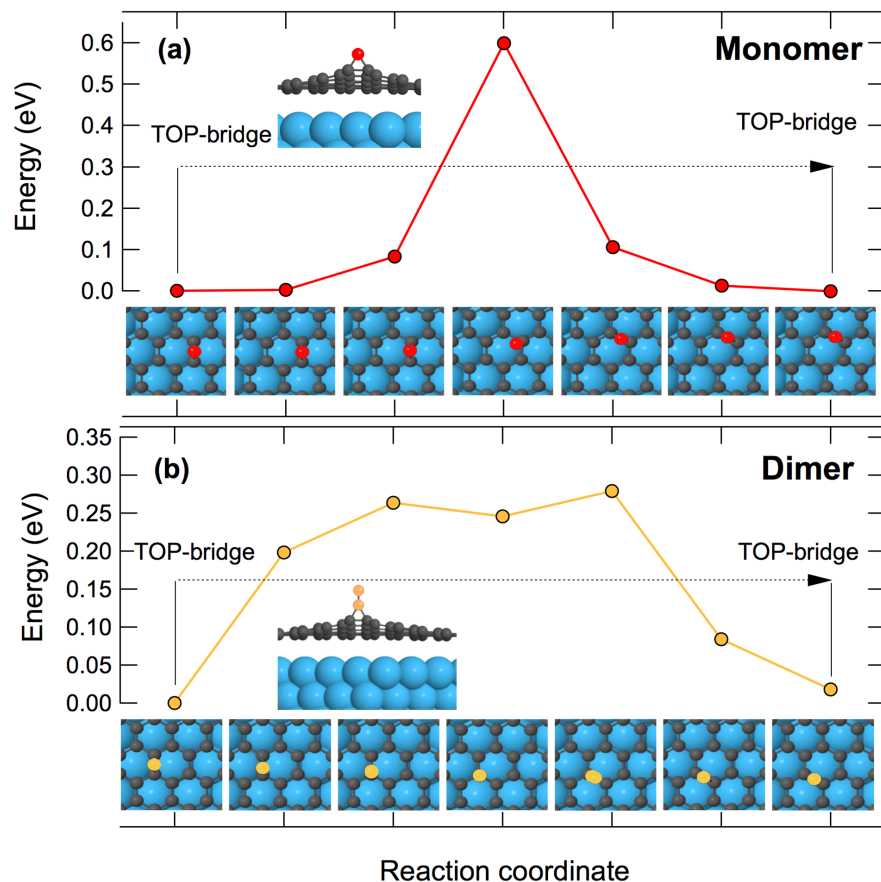


# Graphene growth by molecular beam epitaxy: an interplay between desorption, diffusion and intercalation of elemental C species on the islands

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## 1 Theoretical results



**Fig. S1** Calculated pathway for (a) C<sub>1</sub> and (b) C<sub>2</sub> species diffusion between adjacent unit cells on Gr supported on Ir(111). The energy variation of each system is plotted as a function of the reaction coordinate; the intermediate steps of the process are shown below.

Figure S1 shows the NEB calculations of the diffusion barriers of C<sub>1</sub> and C<sub>2</sub> species on Gr/Ir(111), between two adjacent minimum-energy adsorption sites.. The results are discussed in the main text.

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