Supplementary Information The adsorption of silicon on the iridium surface ruling out silicene growth

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Si adsorption on Ir(111) at different temperatures



Fig.S 1: Sequences of Si2p spectra acquired during the adsorption of 0.4 ML of Si on Ir(111) at (left) 520 K and (right) 670 K. The upper panels show the high resolution spectra measured on the Si adsorbed layers with the best fit curves and the spectral components. The lines mark the BE positions of the Si_B doublet.

Evolution of the $Ir4f_{7/2}$ line shape during Si adsorption



Fig.S 2: Si 2p spectra measured on the Si/Ir(111) surface at Si coverage of 0.3 ML at emission angle of 0° (bulk sensitive configuration) and 70° (surface sensitive configuration).

Evolution of the $Ir4f_{7/2}$ line shape during Si adsorption



Fig.S 3: a) Sequence of $Ir4f_{7/2}$ spectra and b) corresponding 2D intensity plot measured during the adsorption of 1.0 ML of Si on Ir(111) at 670 K.