Supporting information for

Cyclotrimerization of Arylalkynes on Au(111)

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Figure S1 Small scale STM image of the windmill self-assembly before onset of the cyclotrimerization reaction.



Figure S2 Equally scaled STM images of reaction products and overlaid structural models.



Figure S3 Statistical analysis of cyclotrimerization. A total of 186 molecules are identified in the image, and 47 molecules (highlighted in pink colour in panel (a)) have reacted by other

coupling motifs or did not fully react. Around 75% of the molecules have thus undergone cyclotrimerization (highlighted in black colour in panel (a)).



Figure S4 Diacetylene formation at domain boundaries.