Supporting Information

Reversible Transformation of Sub-nanometer Ga-based Clusters to Isolated 
$[^4]Ga_{(4Si)}$ Sites Creates Active Centers for Propane Dehydrogenation

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Figure S8. (a) ADF-STEM image and (b) EXD mapping of Ga$_1$(650-air).

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Figure S9. (a) Atomic and weight percentage of Ga content, (b) EDX spectrum and (c) ADF-STEM image and EDX mappings of a selected area of Ga$_1$(650-air).
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Reaction conditions: 10\% of C\(_3\)H\(_8\) in N\(_2\), WHSV = 8.5 h\(^{-1}\), T = 550 °C.

**Figure S15.** Normalized propene formation rate (g C\(_3\)H\(_6\) h\(^{-1}\) g\(_{\text{Ga}}\)^{-1} m\(^{-2}\)) on Ga\(_1\)(650) over 25 h (5 x 5 h) TOS including four regeneration cycles (synthetic air, 550 °C, 1 h) performed after every 5 h.

Reaction conditions: 10\% of C\(_3\)H\(_8\) in N\(_2\), WHSV = 8.5 h\(^{-1}\), T = 550 °C. We assumed that the regeneration cycles did not change the surface area of Ga\(_1\)(650).