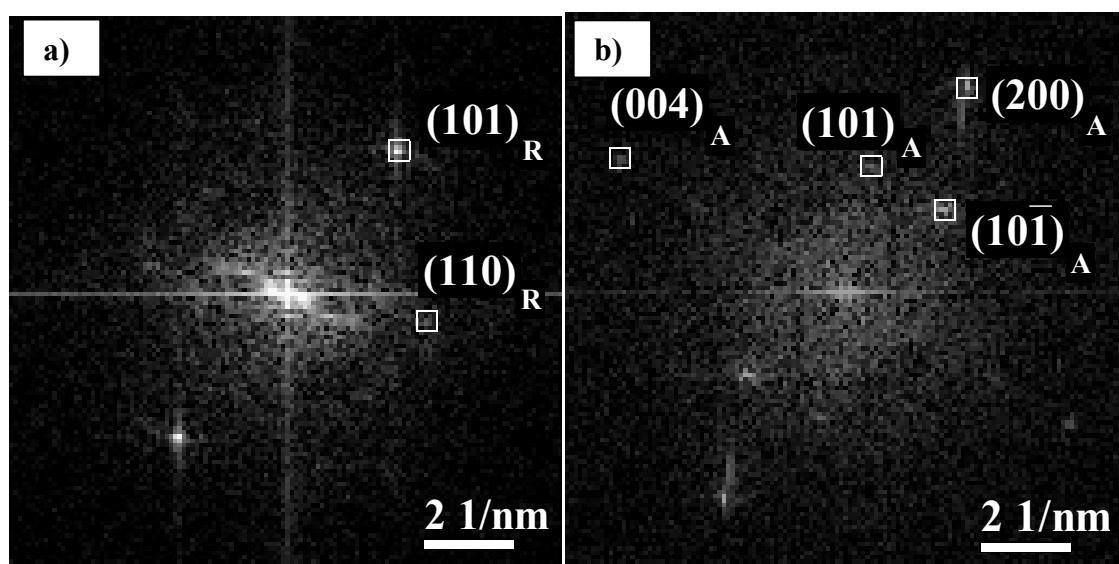


**Supplementary Information**

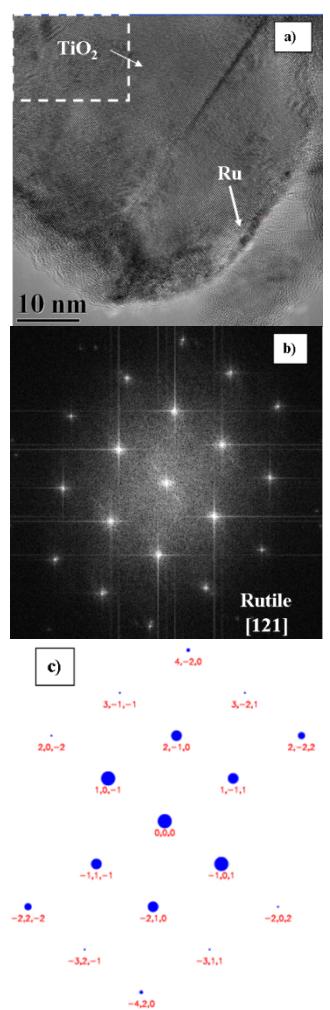
**Support effects on the structure and performance of ruthenium catalysts for the Fischer-Tropsch Synthesis**

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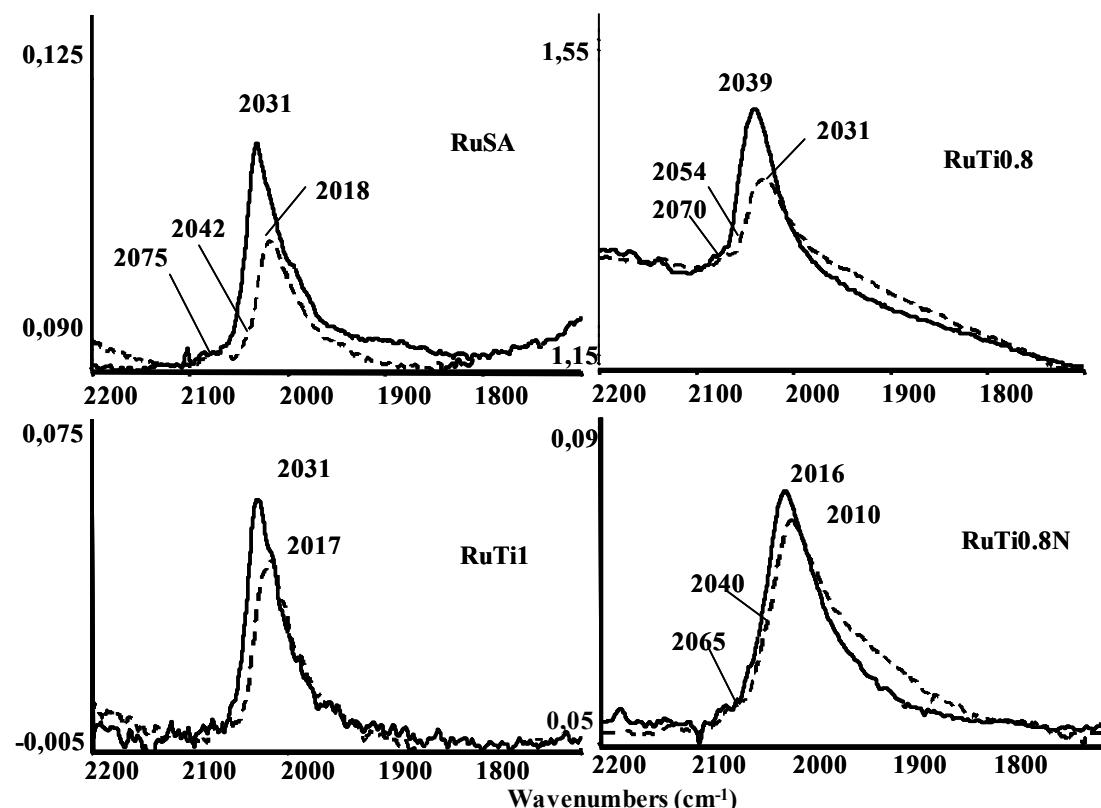
**Figure S1.** Digital diffraction patterns (DDP) of TiO<sub>2</sub> particles labelled as R (a) and A (b) in Figure 3 of the manuscript.



**Figure S2.** (a) HR-TEM image of RuTi0.8N sample; (b) Electron diffraction diagram of the squared region in (a) showing the pattern of rutile oriented along the [121] zone axis; (c) calculated electron diffraction diagram of rutile oriented along the [121] zone axis with WebEMAPS in J.M. Zuo, J. C. Mabon, *Web-based Electron Microscopy Application Software: Web-EMAPS*, Microsc. Microanal. 10 (2004) 1000



**Figure S3.** FT-IR spectra of CO adsorbed on reduced catalysts at room temperature (straight line) and following outgassing at room temperature (dotted line)



**Figure S4.** FT-IR spectra of surface and gas phase (inset) species formed onto the reduced RuTi0.8N and RuSA catalysts after contact with CO + H<sub>2</sub> at 523 K.

