

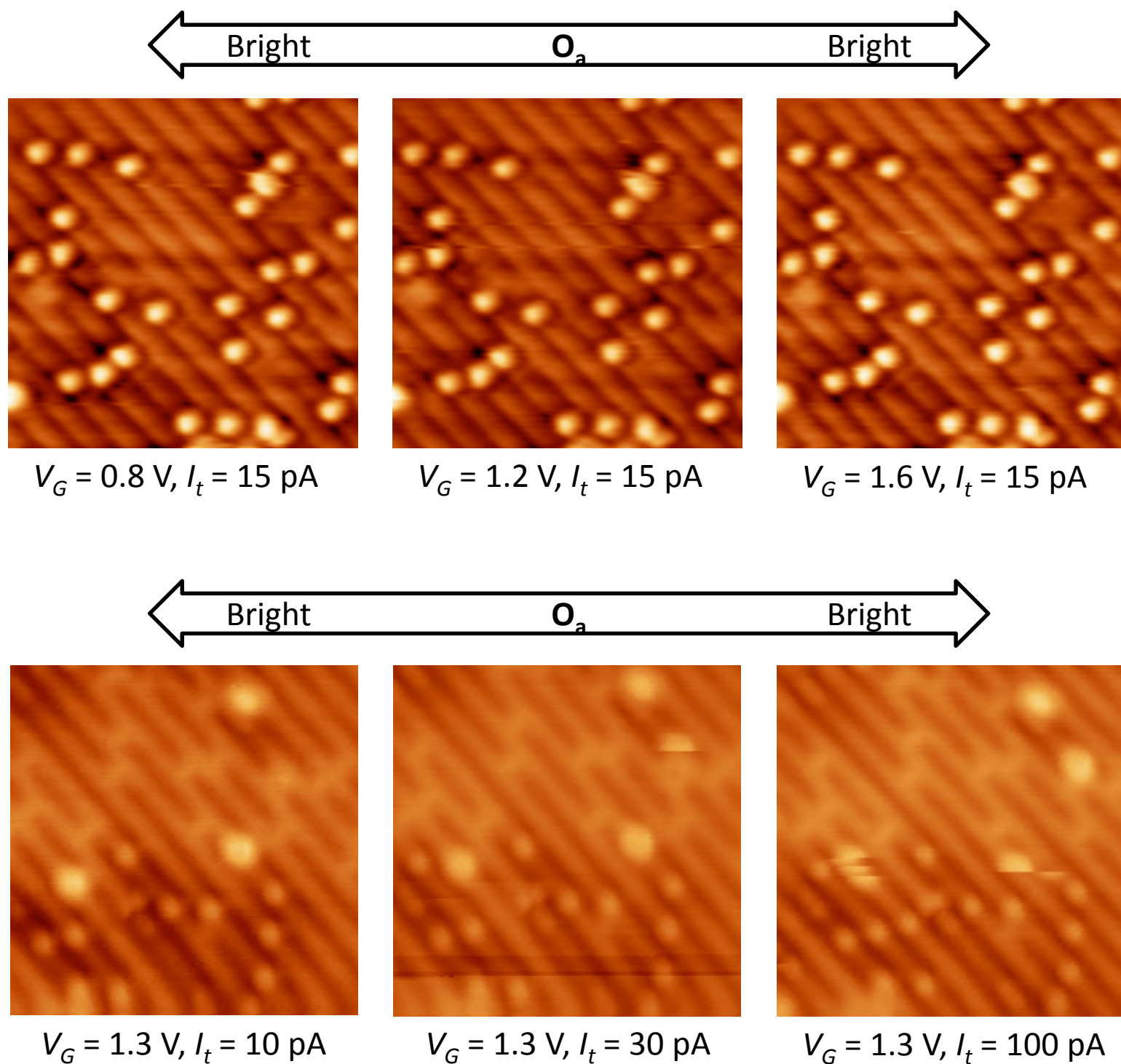
# Interaction of CO<sub>2</sub> with Oxygen Adatoms on Rutile TiO<sub>2</sub>(110)

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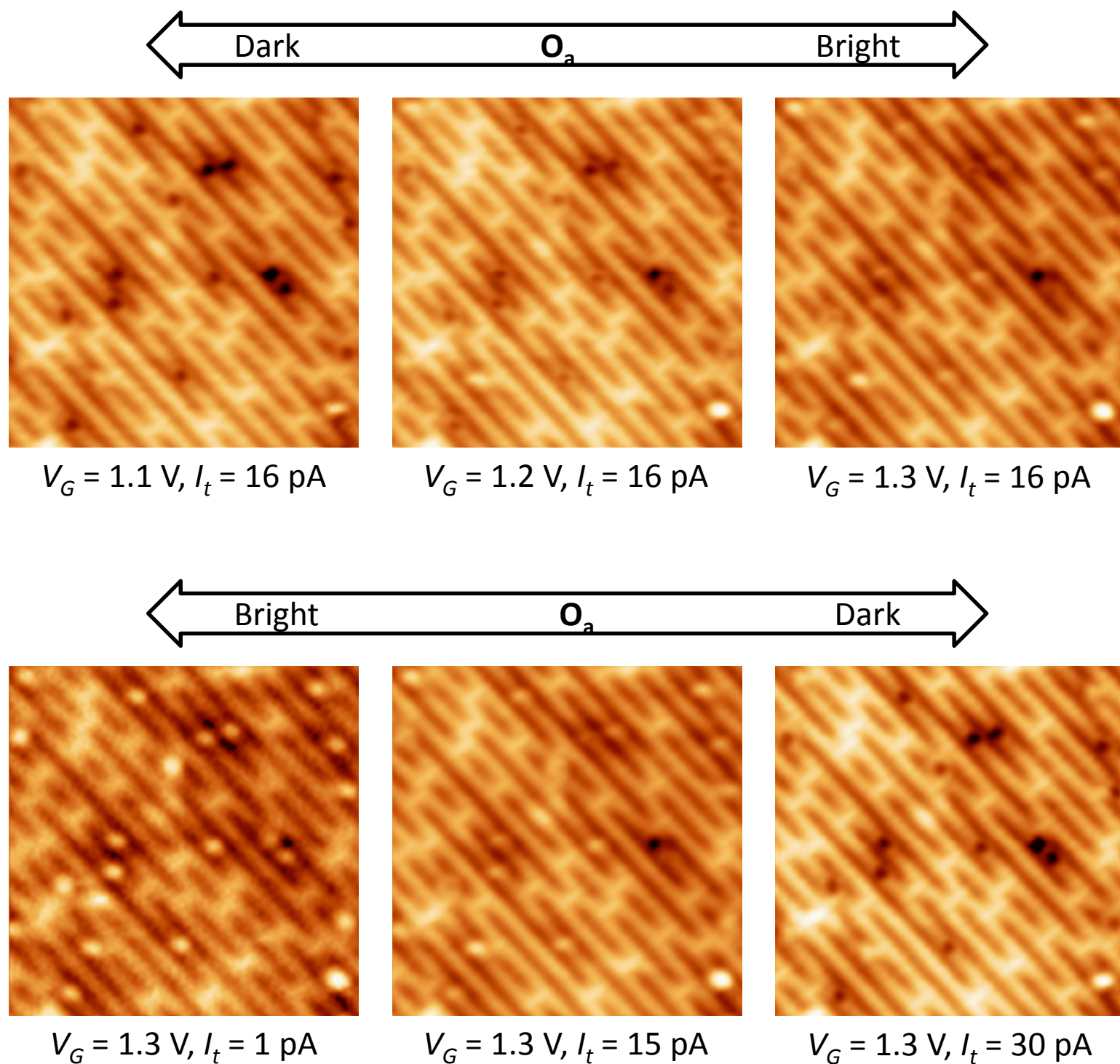
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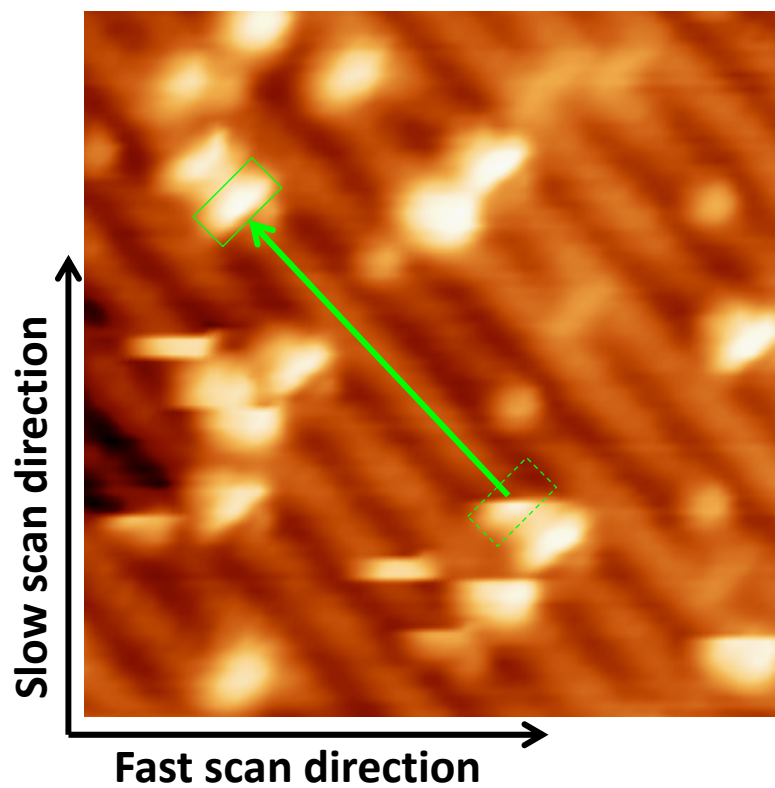
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**Figure S1.** STM images ( $8 \times 8 \text{ nm}^2$ ) illustrating the regular bright appearance of oxygen adatoms on  $\text{TiO}_2(110)$  at different tunneling voltages and currents.



**Figure S2.** STM images ( $10 \times 10 \text{ nm}^2$ ) illustrating the unusual dark appearance of oxygen adatoms on  $\text{TiO}_2(110)$  at low tunneling voltages and high currents after exposing the STM tip to  $\text{CO}_2$ .



**Figure S3.** STM image illustrating tip-induced diffusion of CO<sub>2</sub> at 20 pA tunneling current (1.4 V, 6.5 × 6.5 nm<sup>2</sup>). The CO<sub>2</sub> molecule diffused from bottom right to top left as indicated by the arrow.