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Titolo	The Chemistry of CO <sub>2</sub> and TiO <sub>2</sub> : From Breathing Minerals to Life on Mars // by Svatopluk Civiš, Martin Ferus, Antonín Knížek
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Nota di contenuto	Chapter 1 - Carbon dioxide and the effects on climate -- Chapter 2 - Oxygen atoms exchange between carbon dioxide and TiO <sub>2</sub> -- Chapter 3 - Photocatalytic Transformation of CO <sub>2</sub> to CH <sub>4</sub> -- Chapter 4 - Additional views on Origin of life molecules -- Chapter 5 - Applications of the CO <sub>2</sub> photocatalytic reduction -- Chapter 6 - Conclusion.
Sommario/riassunto	This book provides a comprehensive overview of the chemistry of CO <sub>2</sub> in relation to surface interactions and photocatalytic transformation by UV radiation. The first part deals with the modelling of an anatase surface, its interaction with CO <sub>2</sub> , and the spontaneous exchange of

oxygen atoms between the gas and solid phases. The book then naturally transitions to the photocatalytic reduction of CO<sub>2</sub>, achieved by adding UV radiation and traces of water to the experimental system, to produce methane and CO. This photocatalytic reduction is explained in detail and the implications for planetary chemistry (specifically concerning Mars), as well as Earth's atmospheric chemistry and global warming, are discussed.

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