1. Record Nr. UNINA9910765506403321 Autore **Bogaerts Annemie Titolo** Plasma Catalysis / Annemie Bogaerts Basel, Switzerland:,: MDPI,, 2019 Pubbl/distr/stampa **ISBN** 9783038977513 3038977519 Descrizione fisica 1 online resource (1 p.) Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Sommario/riassunto Plasma catalysis is gaining increasing interest for various gas conversion applications, such as CO2 conversion into value-added chemicals and fuels, N2 fixation for the synthesis of NH3 or NOx, methane conversion into higher hydrocarbons or oxygenates. It is also widely used for air pollution control (e.g., VOC remediation). Plasma catalysis allows thermodynamically difficult reactions to proceed at ambient pressure and temperature, due to activation of the gas molecules by energetic electrons created in the plasma. However, plasma is very reactive but not selective, and thus a catalyst is needed to improve the selectivity. In spite of the growing interest in plasma catalysis, the underlying mechanisms of the (possible) synergy between plasma and catalyst are not yet fully understood. Indeed, plasma catalysis is quite complicated, as the plasma will affect the catalyst and vice versa. Moreover, due to the reactive plasma environment, the most suitable catalysts will probably be different from thermal catalysts.

More research is needed to better understand the plasma-catalyst

interactions, in order to further improve the applications.