

1. Record Nr.	UNINA9910633982703321
Autore	Farkhondehfal M. Amin
Titolo	Heterogeneous Electrocatalysts for CO2 Reduction to Value Added Products // M. Amin Farkhondehfal and Juqin Zeng
Pubbl/distr/stampa	London : , : IntechOpen, , 2021
ISBN	1-83968-128-4
Descrizione fisica	1 online resource (155 pages)
Disciplina	541.395
Soggetti	Heterogeneous catalysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Introduction -- 2. CO-selective catalysts -- 2.1 Metals and bimetallic materials -- 2.2 Single metal atom supported on N-doped carbon -- 2.3 Immobilized molecular catalysts -- 3. Formate-selective catalysts -- 3.1 Metal and metal oxides -- 3.2 Metal sulfides -- 3.3 Bimetallic catalysts -- 4. C1+ hydrocarbon selective electrocatalyst -- 4.1 Cu alloys -- 4.2 Other metallic alloys -- 5. Oxygenated alcohol selective electrocatalysts -- 5.1 Metal alloys -- 5.2 Metal oxides -- 6. Conclusions -- References.
Sommario/riassunto	The CO2 that comes from the use of fossil fuels accounts for about 65% of the global greenhouse gas emission, and it plays a critical role in global climate changes. Among the different strategies that have been considered to address the storage and reutilization of CO2, the transformation of CO2 into chemicals and fuels with a high added-value has been considered a winning approach. This transformation is able to reduce the carbon emission and induce a "fuel switching" that exploits renewable energy sources. The aim of this chapter is to categorize different heterogeneous electrocatalysts which are being used for CO2 reduction, based on the desired products of the above mentioned reactions: from formic acid and carbon monoxide to methanol and ethanol and other possible by products. Moreover, a brief description of the kinetic and mechanism of the CO2 reduction reaction and pathways toward different products have been discussed.