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Nota di contenuto	""Foreword""; ""Acknowledgement""; ""Abstract""; ""Zusammenfassung""; ""Contents""; ""List of Figures""; ""1 Introduction""; ""1.1 Background""; ""1.2 Carbon Dioxide: a Greenhouse Gas""; ""1.3 Carbon Capture and Storage (CCS)""; ""1.3.1 Carbon Dioxide Separation""; ""1.3.2 Carbon Dioxide Transport""; ""1.3.3 Carbon Storage""; ""1.4 Carbon Capture and Utilization (CCU) or Carbon Dioxide Recycling""; ""1.4.1 Biological Conversion""; ""1.4.2 Photochemical Conversion""; ""1.4.3 Electrochemical Reduction""; ""2 Experimental""; ""2.1 Apparatus""; ""2.2 Materials""; ""2.3 Setup for Electropolymerization""; ""2.4 Setup for Electrolysis""; ""2.5 Calculation of the halfwave-potential""; ""3 Results and Discussion""; ""3.1 Chemical Synthesis""; ""3.1.1 Synthesis of 3-(6-bromohexyl)thiophene""; ""3.1.2 Synthesis of 4-(3-thienylheptyl)pyridine""; ""3.1.3 Synthesis of 4-Methyl-4a€?-(3-thienylheptyl)2,2a€?-bipyridine""; ""3.1.4 Synthesis of [Re(4-Methyl-4a€?-(7-(3-thienyl)heptyl)-2,2a€?-bipyridinyl)(CO) ₃ Cl]""; ""3.2 Electropolymerization"";

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Sommario/riassunto

Melanie Weichselbaumer presents the synthesis of the monomers as well as the electropolymerization on Pt-electrodes. The electrolysis experiments were carried out for 40 hours and the products were analysed by gas chromatography and ionic chromatography. Pyridine-functionalized and Rheniumbipyridine-functionalized Polythiophenes can be used as heterogeneous catalysts for CO₂ reduction. Contents
Carbon Dioxide: A Greenhouse Gas
Carbon Capture and Storage Setup for Electropolymerization/Electrolysis
Chemical Synthesis of Pyridine-functionalized and Rheniumbipyridine-functionalized Thiophenes
Target Groups
Researchers and students in the fields of greenhouse gas, global warming, CO₂-reduction, electrochemistry and chemical synthesis
Practitioners in these areas
The Author
Melanie Weichselbaumer obtained her Master's Degree under the supervision of o.Univ. Prof. Mag. Dr. DDr. h.c. N. S. Sariciftci at University of Linz, Austria.
