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ON CLEANER ENERGY TRANSITION



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ABSTRACTS

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MARINE PLASTIC WASTE MANAGEMENT ACCORDING TO CIRCULAR ECONOMY CONCEPT THROUGH THE INTERDISCIPLINARY AND INTERNATIONAL COOPERATION

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The successful separation of plastic waste is crucial for the subsequent mechanical and chemical recycling processes. Thermochemical processes such as catalytic pyrolysis, catalytic gasification, aminolysis, and hydrothermal carbonization are applied to convert feedstocks into valuable chemicals and materials. The project will involve process modeling, techno-economic analysis, and life cycle assessment to provide essential information about the economic viability and environmental impact of these processes. Additionally, renewable energy sources and carbon capture technologies will be integrated into the final design of the CUPOLA processes to ensure carbon neutrality. This project has the potential to bring together a wide range of research and industry groups in chemistry, chemical engineering, civil engineering, mechanical engineering, environmental science, and computer science to collaborate on the recycling of marine plastic waste. The success of the project will contribute to the achievement of Sustainable Development Goals (SDGs) 3, 12, and 14 by reducing plastic pollution in the oceans and converting waste into value-added products.