**Institut für Industriebetriebslehre und Industrielle Produktion (IIP)**
Lehrstuhl für Betriebswirtschaftslehre insb. Produktionswirtschaft und Logistik
**Prof. Dr. Frank Schultmann**

# Masterarbeit / Master Thesis

Am Lehrstuhl für Betriebswirtschaftslehre ist in der Arbeitsgruppe Projekt- und Ressourcenmanagement in der bebauten Umwelt eine Abschlussarbeit zu folgendem Thema zu vergeben:

## Life cycle assessment, SWOT analysis and market study of innovative sulfur-based materials/products

### Background

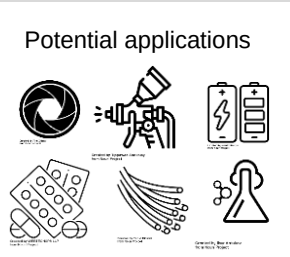
Climate change demands for greenhouse gas reduction or mitigation and multiple energy and resource efficiency actions. However, it needs to be assessed, if and how new materials/products really contribute to (inter)national sustainability goals and to climate goals and circular economy in particular. Also, it is necessary to assess the associated cost to discuss and decide on favorable framework conditions for their usage.

Bildquelle: www.plasticsrecyclers.eu/circular-economy

### Content of the work

Aim of the thesis is the **data collection and assessment of new sulfur materials and products**. Sulfur ($S_8$) is an ample available element that is a byproduct e.g. of petroleum refining. Due to many possible applications, first a promising material and most relevant applications should be identified and selected. Then, a SWOT or similar analysis should be performed to identify strengths, weaknesses, opportunities/potentials and threads/risks. Then, the thesis should include a simplified life cycle assessment (LCA) with its main outcomes of $CO_2$e emissions and primary energy demand. For this, a revision of relevant literature and expert interviews with fellow researchers have to be performed to collect data. Third, the LCA should be performed with openLCA or Gabi software. The calculations should be done for a case study material/product and can be associated with a market study. Furthermore, the assessment should include the comparison with traditional materials/ products that could be replaced by the new sulfur-based material/product.

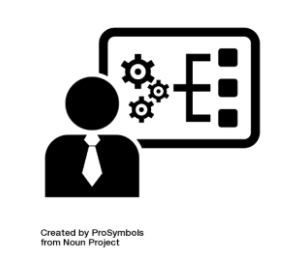

Bildquelle: ExxonMobil Production Deutschland GmbH



Bildquelle: noun-project

### Requirements

This thesis is suitable for students in industrial engineering or similar fields. Intrinsic motivation, proactiveness and affinity to numbers are helpful. The preferred language of the thesis is English. You will be able to enhance your knowledge on new, sustainable materials, industrial ecology and circular economy. Furthermore, you will gain proficiency and expertise in techno-economic and environmental assessments and LCA software.



Bildquelle: noun project

### Start / Duration

As soon as possible / 6 Months

### Contact person

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