

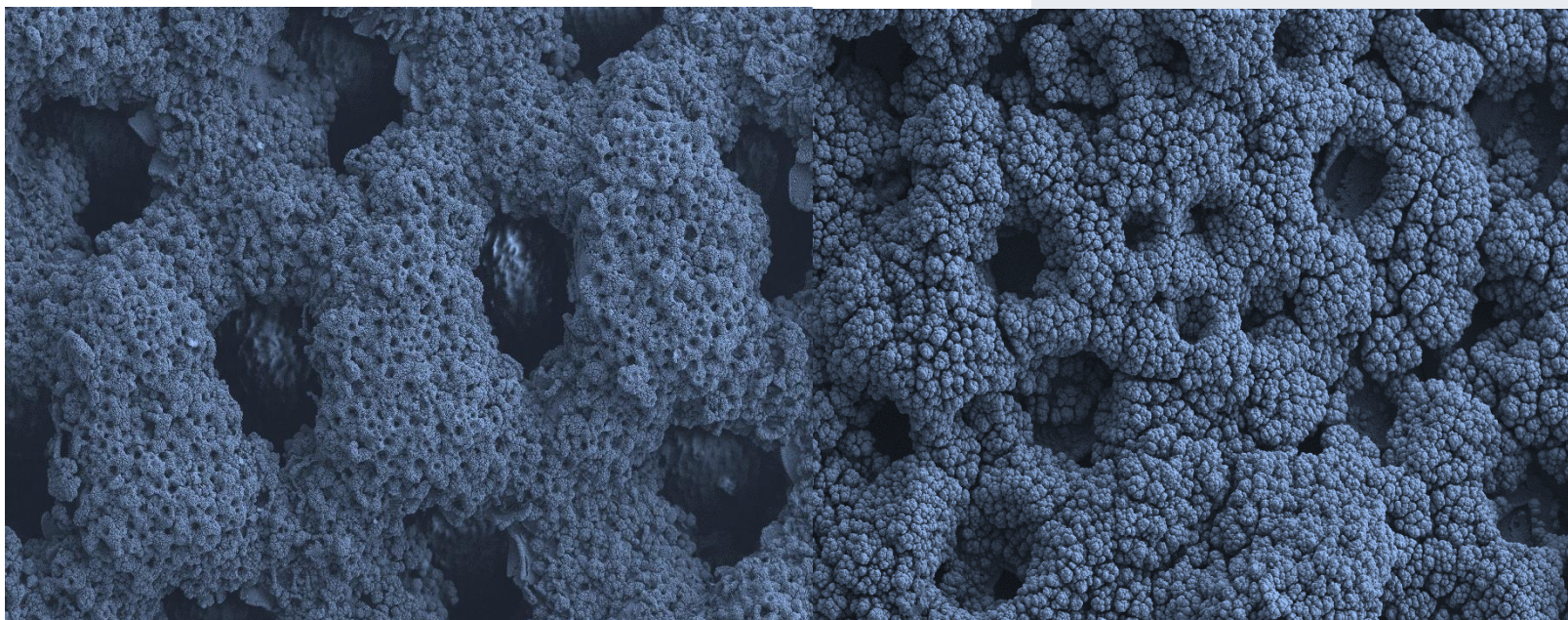
# Additive Manufacturing of Energy Materials

1<sup>st</sup> Symposium 2023

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## Save the date

June 14, 2023  
University of Twente  
U Parkhotel



To meet the increasing energy requirements in a low-carbon economy, the development of new materials that improve the efficiency of sustainable large scale energy conversion and storage systems is essential. Additive manufacturing (AM) technology with the capability of fabricating complex physical products of a variety of materials and composites from digital models is a great candidate for obtaining “pre-programmed” site-specific properties, as for example, well-defined three dimensional (3D) porous structures and novel materials for energy applications.

University of Twente will host the in-person one-day symposium expecting participants from multidisciplinary research (materials science, chemical engineering, physics, and mathematics), AM, and energy application communities.

Academic presentations

Industrial presentations

Poster session

Discussion round

Free of charge participation, but  
limited amount (~100) of  
participants

**Contact:**

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4TU.High-Tech Materials

# SCOPE

Additive manufacturing (AM), also known as 3D printing, is a rapidly growing technology with many applications in various fields. Recently, there has been significant interest in using AM to fabricate Energy Materials, such as batteries, supercapacitors, and fuel cells. This approach offers several advantages over traditional manufacturing methods, including the ability to create complex geometries, reduce waste, and achieve high precision. In this symposium, we will bring together leading academics and industries in the relevant disciplines of energy conversion and storage technologies and AM, and discusses the current state-of-the-art in AM of Energy Materials, including the materials and processes used, the challenges and limitations, and the potential applications. This will eventually lead to highlight the recent advances in this field and future directions for research and development of functionalize high-performance, cost effective materials with a low carbon footprint, for a wide range of energy systems. The presentations and discussion will cover application-oriented topics over the whole field of Energy Materials, including:

- ADDITIVE MANUFACTURING
- AI-GUIDED DESIGN
- FUNCTIONALLY GRADED MATERIALS
- COMPOSITE MATERIALS
- MULTI-MATERIALS
- ELECTRODE MATERIALS
- ENERGY CONVERSION
- ENERGY STORAGE

# PROGRAM

09:30 - 10:00 WELCOME COFFEE

10:00 I. Gibson (UT-ET) Introduction

10:20 D. Jafari (UT) Presentation AM1

10:40 A. Zafari (UT) Presentation AM2

11:00 P. Taheri (TUD) Precisely manufactured electrodes for CO<sub>2</sub> electrochemical reduction

11:20 R. Kortlever (TUD) Engineering electrocatalytic materials for CO<sub>2</sub> conversion to fuels and bulk chemicals

11:40 (Groningen) Presentation3 EM

12:00 - 14:00 LUNCH - POSTER SESSION

14:00 Simulation (?)

14:20 Machine Learning, AI (?)

14:40 Battolyser

15:00 Industrial presentation AM

15:20 S. van Eijk (TNO) SEWGS: revolutionary CO<sub>2</sub>-reduction technology

15:40 NWO / RVO

16:00 - 18:00 DIRINK - DISCUSSION

## ARE YOU READY TO PARTICIPATE?

University of Twente

U Parkhotel, De Veldmaat 8, 7522 NM Enschede

Registration Deadline: May 30, 2023

Poster Submission Deadline: May 24, 2023

Contact: AMforEnergy@utwente.nl



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