

# LUCIDEON

Materials Development and  
Commercialization



## **Research Organisation Name:**

Lucideon

## **About:**

Lucideon is a development and commercialization organization (DCO), specialising in materials technologies and processes. Our application of cross-industry insight, materials science expertise and innovative thinking allows industry to develop and implement disruptive technology platforms, providing cost and/or product performance benefits and enabling real market differentiation. Lucideon utilises its thousands of man years of experience in development, analysis and assurance to deliver significant competitive advantage to its customers.

## **Location(s):**

Staffordshire

## **Technical Capability:**

UKAS-accredited test house for materials and products testing and analysis; development and pilot plant facilities; flash sintering at pilot plant scale; geopolymer cement processing.

## **Research Areas Relevant to the Foundation Industries:**

Resource efficiency and waste utilisation (all 6 FIs); energy efficiency (ceramics, glass); AI and digitisation.

## **How to Engage with Lucideon:**

Contract R&D and testing; collaborative R&D.

## **Contact Name and e-mail address:**

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## **Case Study: Flash Sintering Helps to Clean up Green Energy**

Fuel cell technology has a major role to play in the decarbonization of our infrastructures. Solid oxide fuel cells (SOFC), which use a ceramic electrode and electrolyte layers, achieve higher efficiencies, longer lifetimes and fuel flexibility over other fuel cell technologies, offering advantages in many stationary power and transport applications.

Due to the lower sintering temperatures and times, Flash Sintering has potential to decrease production energy consumption and increase productivity, resulting in a lower cost base per unit and thus allowing wider adoption of this green technology.

Initial results indicate that Lucideon's Flash Sintering technology achieves microstructures and performance comparable to conventional results. Designs for

scale up are underway, in parallel to further process development, to demonstrate the improved production rates possible.