

# PALESTRA INAUGURAL DO NOVO GRUPO DE EXTENSÃO HYDROGEN & METHANOL MOBILITY!

Caminhos e Possíveis Aplicações



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PMR / PNV - Otimização



Tendências da indústria

# APLICAÇÕES

# Mobilidade – Maquinário Pesado

01 JULY 2020

## JCB LEADS THE WAY WITH FIRST HYDROGEN FUELLED EXCAVATOR



# Mobilidade – Maquinário Pesado



01 JULY 2020  
JCB LEA  
HYDRO

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News / International / Dutch firm pioneers diesel-to-hydrogen conversion

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## Dutch firm pioneers diesel-to-hydrogen conversion

3 Jan Terberg Techniek, a Dutch specialist in vehicle modifications, has converted a pair of Liebherr excavators from diesel power to hydrogen-electric.



The two Liebherr 916 wheeled excavators belonging to contractor Jos Scholman are now powered by hydrogen fuel cells manufactured by Zepp Solutions based in Delft.

Over six months of operational testing, the excavators have proven to be reliable and performing well. The Zepp Y50 fuel cell and hydrogen storage system offers an environmentally friendly alternative to diesel, producing no emissions other than water.

Terberg Techniek used the Zepp hydrogen system to develop a conversion kit which it now hopes to use to convert other construction equipment from diesel to a hydrogen-electric powertrain.

Above: The two Liebherr diggers have been testing for six months on-site

Hydrogen is gaining popularity in the construction equipment industry



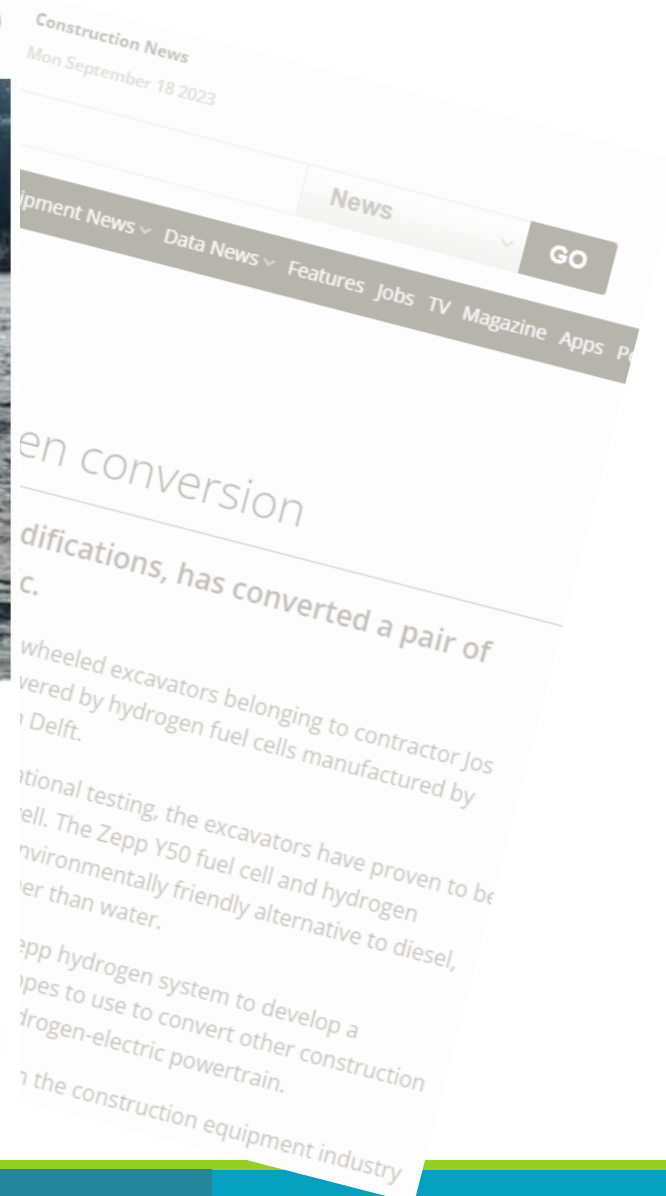
# Mobilidade – Drones Submarinos



## Cellula's Solus-XR Starts Sea Trials With Hydrogen Fuel Cell Underwater Drones

By FuelCellsWorks | Canada, News | No Comments  
September 18, 2023 | 3 min read

Marking a Significant Project Milestone and Demonstrating Commitment to Cutting-Edge XLUUV Technology.

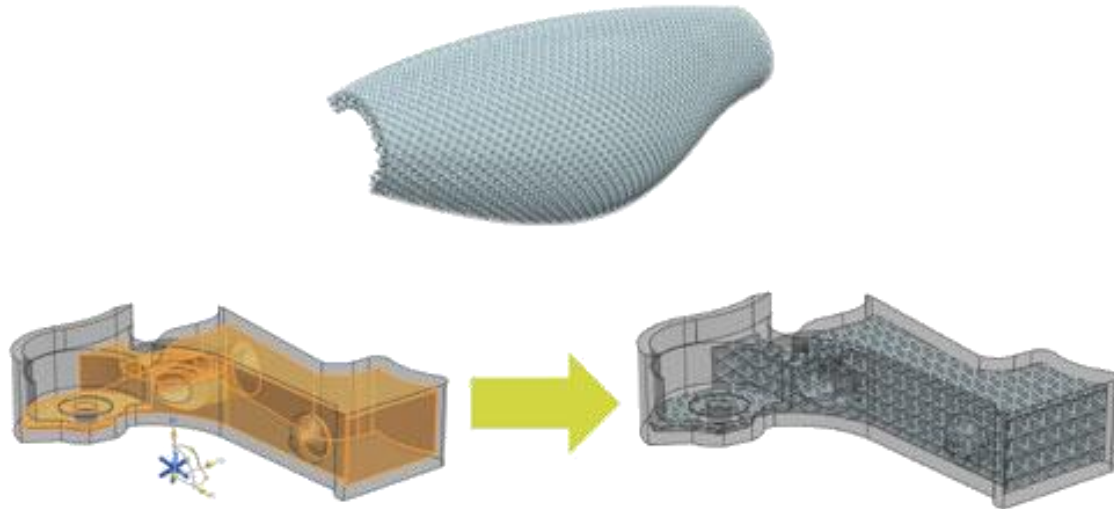
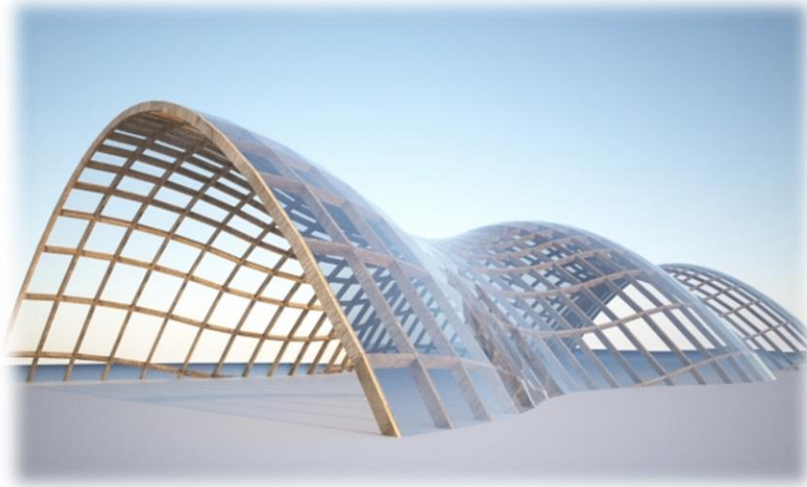




Melhoria de rendimento

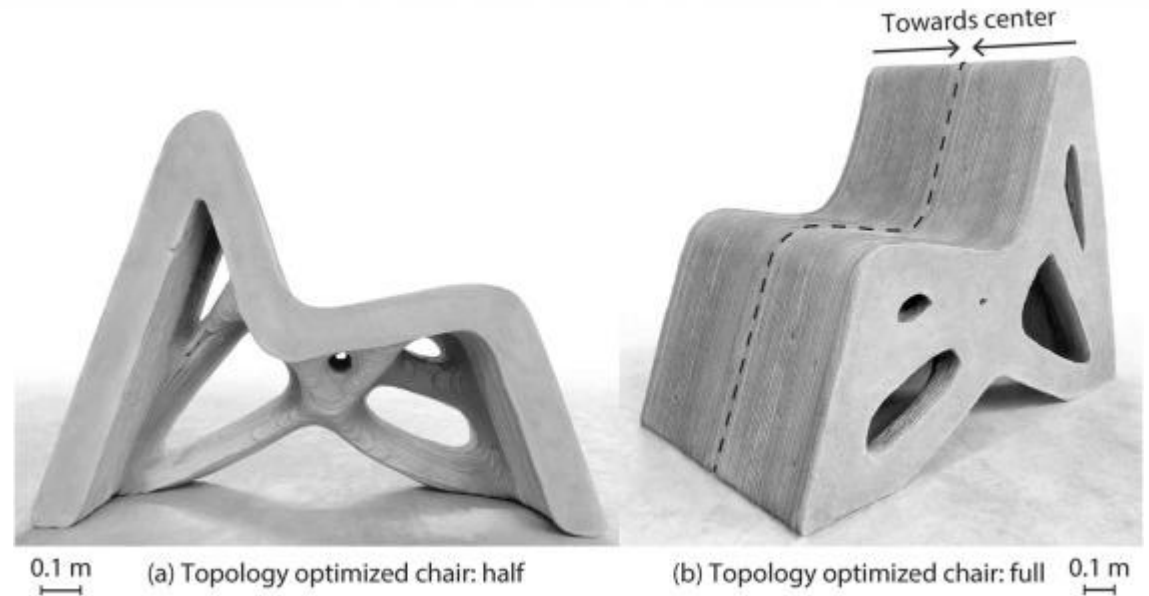
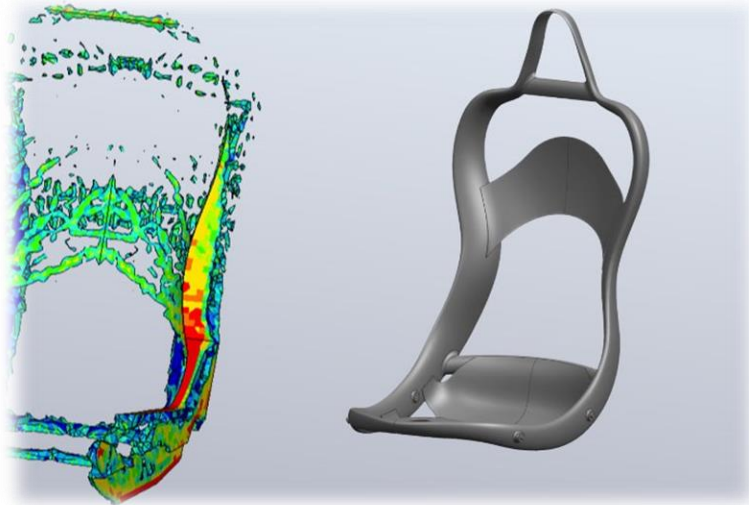
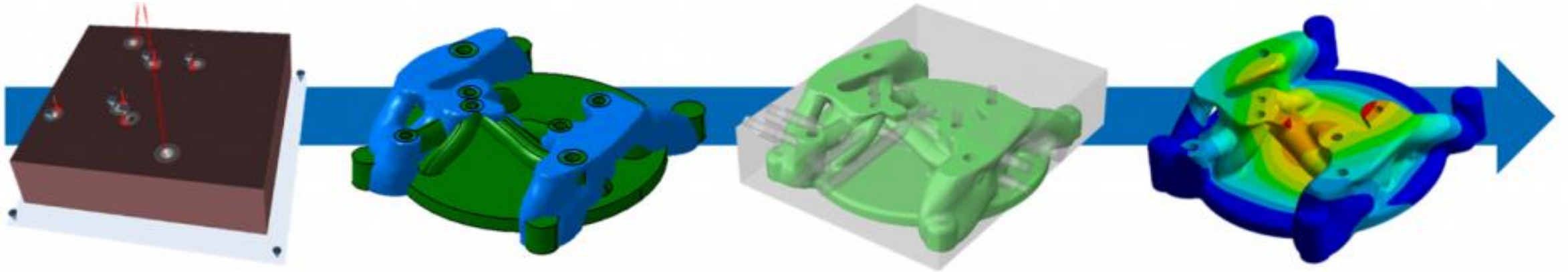
# NOVAS TECNOLOGIAS

# Estruturas Ultraleves





# Estruturas Ultraleves – Design por Otimização





# Estruturas Ultraleves – Design por Otimização



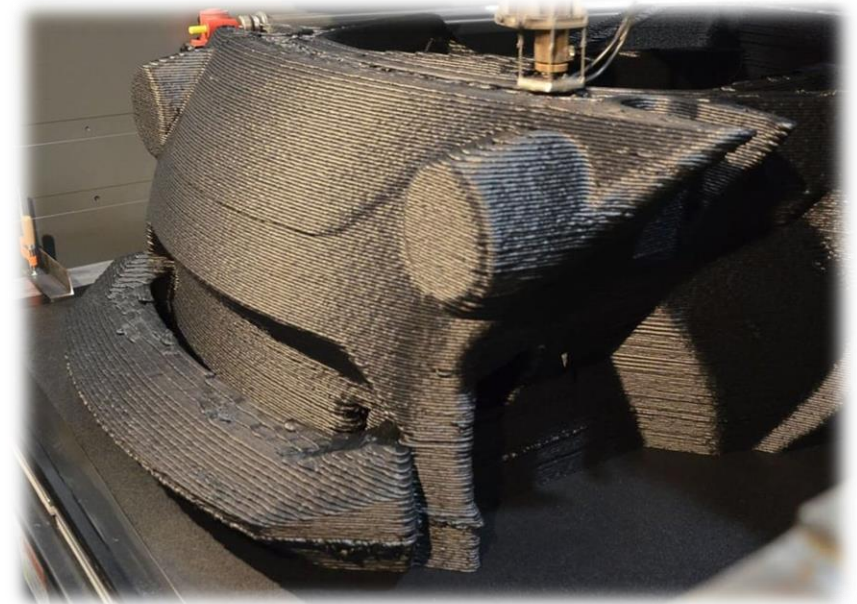
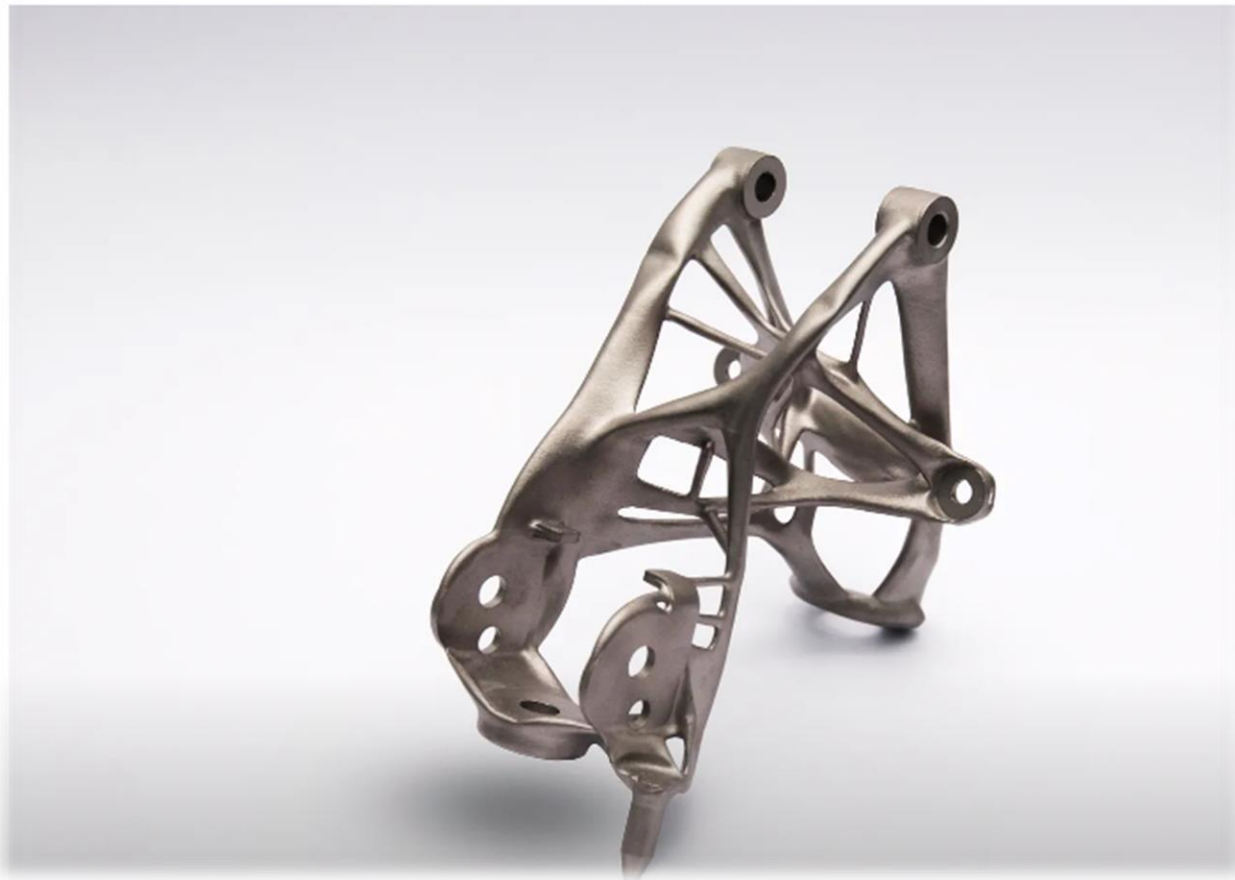
# Manufatura – Impressão 3D



# Manufatura – Impressão 3D

**WIRED**

GM's 3-D-Printed Seat Bracket Heralds a Future of Cheaper, Better Cars



# Possibilidades

- Uso de novas tecnologias para projeto e manufatura
  - Ferramentas de projeto;
  - Otimização;
  - CAD e CAE;
- Manufatura por Impressão 3D
  - Disponível na POLI
  - Prototipagem / Final
- Outros projetos!



# Projetos

- Shell Eco Marathon 2024



**POLIMILHAGEM**

- Protótipos reduzidos
  - Estruturas ultraleves;
  - Miniaturas de maquinário pesado;
  - Projeto de ferramentas

# Inscrições para o grupo de extensão



Até 29/09!