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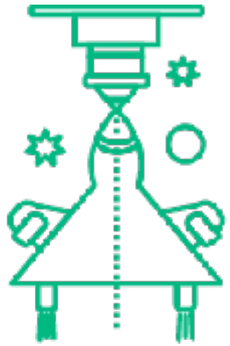
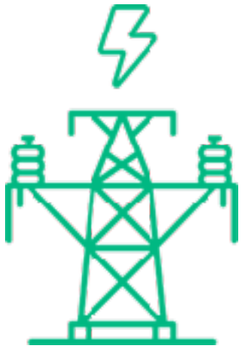
Pain Points of Some Industries



Aerospace Industry

Automotive Industry

Medical Industry



Energy Industry

Reduce manufacturing times and expand the applicability of advanced ceramics in high-tech thermo-structural applications.

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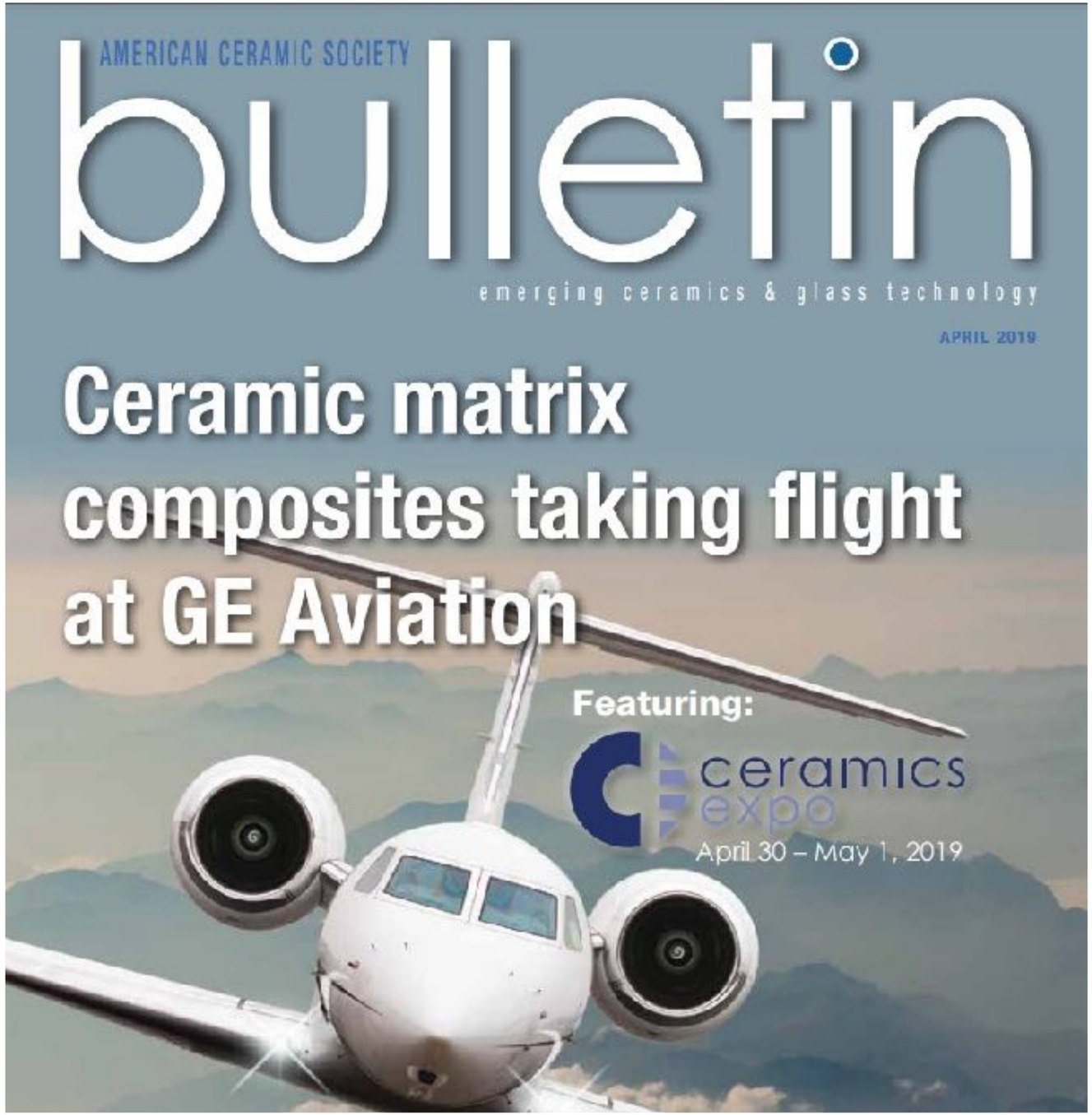

"The holy grail for jet engines is efficiency, and the improved high-temperature capability of CMC's systems is a great advantage"

Jim Steibel (General Electric), in American Ceramic Society Bulletin, Vol. 98, Nº 3, 2019.

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What do we do

We design and manufacture advanced ceramic materials for, among others, 3D-FDM printing and CIM processes.

+50%

Productivity

+20%

Thermo-mechanical performance

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Unique Selling Proposition

Thanks to our proprietary technology we are capable of ***easily obtaining*** *technical ceramic-based materials with* ***tailored properties*** *using* ***affordable*** *manufacturing processes.*

*"A proprietary technology capable of **easily obtaining** technical ceramic-based materials **with tailored properties...***

Intrinsic Properties of Technical Ceramics

- Temperature Resistance
- Mechanical Strenght
- Stability
- Lightness
- Durability
- Corrosion resistance
- Insulating capacity
- Bio Compatibility

Additives

Advanced Materials

- **Piezoelectric ceramics**
- **Semiconductive ceramics**
- **Ceramic electrodes**
- **Porous ceramics**

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*…using **affordable manufacturing** processes”*

Conducting Ceramics

Ceramic filament/pellet charged with ZnO, MnO_2 or TiN nanoparticles

Current Technology

Hot Isostatic Pressing
Spark Plasma Sintering

Ceramic Separators

Ceramic filament/pellet charged with organic nanoparticles

Current Technology

Powder Pressing
Extrusion with binder

Semiconducting Ceramics

Ceramic filament/pellet charged with SnO_2 nanoparticles

Current Technology

Hot Pressing Sintering
Silicon/Quartz based materials

Smart Actuators

Ceramic filament/pellet charged with PZT nanoparticles

Current Technology

Cold Isostatic Pressing
Direct sintering of pure PZT

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Our knowledge

Our patented technology leads to customized ceramic materials with controlled microstructure and defined final properties

We offer game changer materials based on a combination of advanced ceramics and a polymeric binder, which can be removed efficiently following clean and eco-friendly processes

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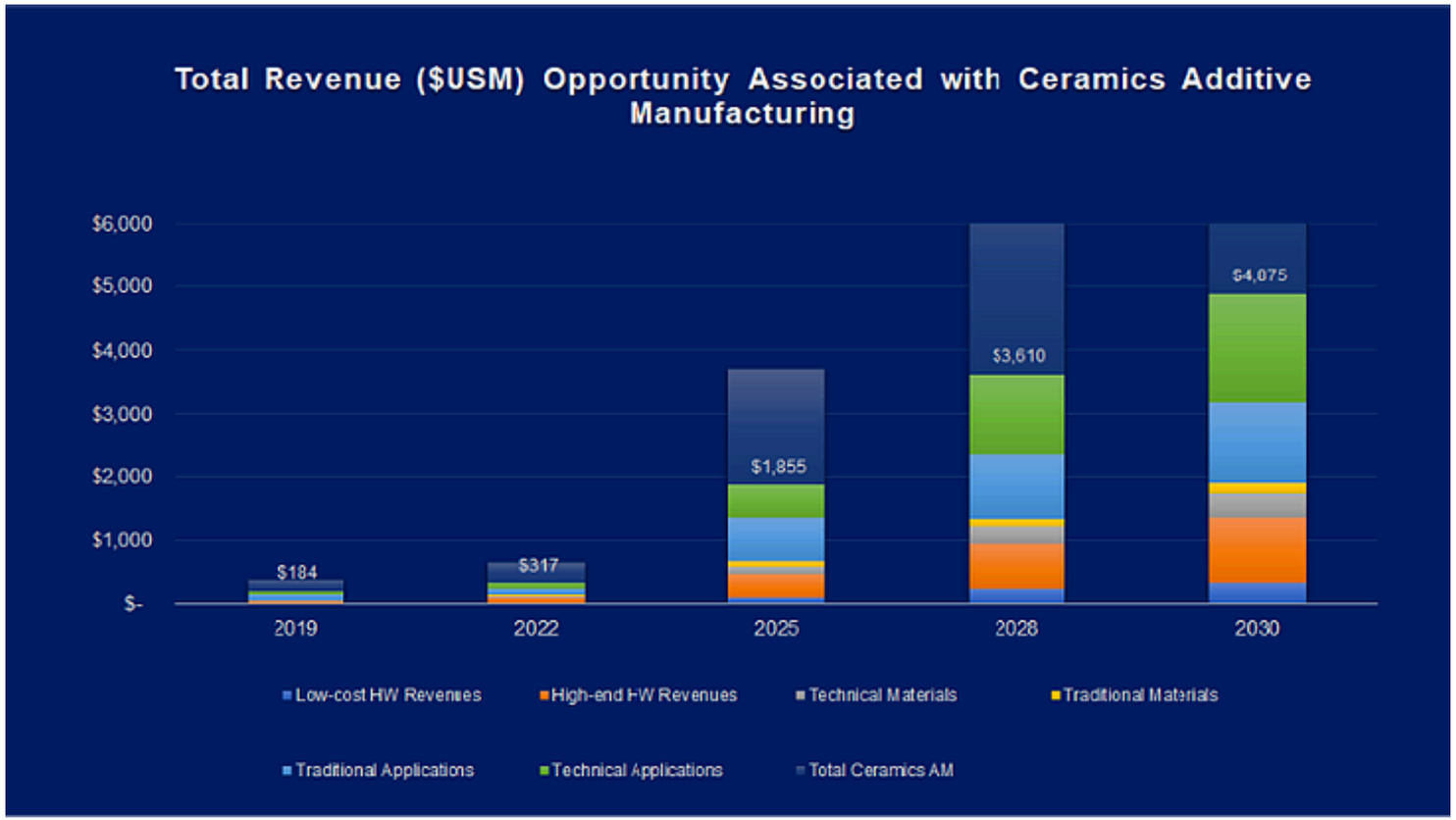
Potential Market

Ceramic AM

*The **adoption of ceramic additive manufacturing is expected to experience its tipping point in 2025** as all major AM technologies supporting the production of final ceramic parts reach maturity*



According with the estimated growth, it is expected that the ceramic additive manufacturing industry will generate around of € 4,1 billions on 2030 with a CAGR 2022 - 2030 of 40 %.

Source: SmartTech

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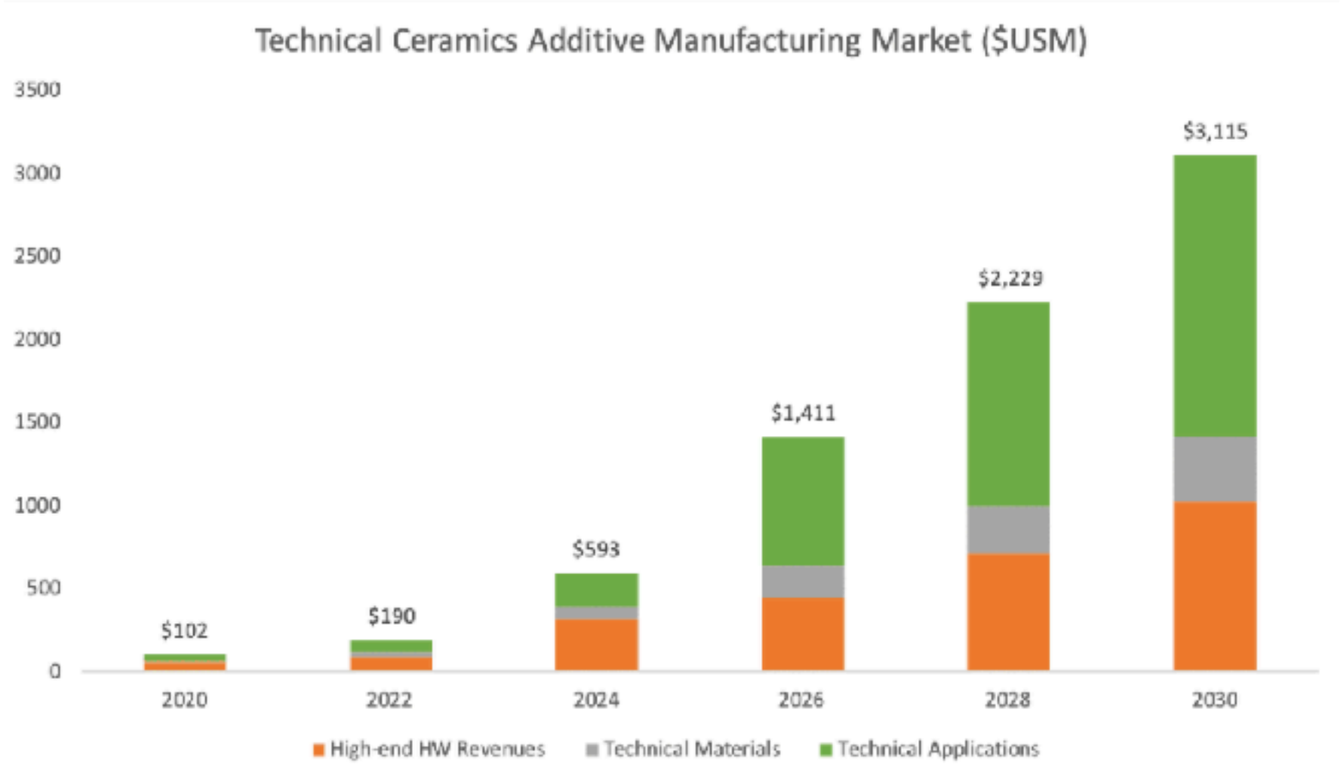
Addressable Market

Advance Ceramic AM

Technical ceramics can grow into a $3.1 billion overall market segment by 2030, including all hardware, materials and associated part revenues (or revenue equivalent)

AM industry companies are expected to generate the most revenues for ceramic parts for the foreseeable future



Source: 3dpbm elaboration of SmarTech Analysis data.

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Products

Alumina - Titania - ZTA – YSZ - SiC - Si3N4

Ceramics filaments for 3D-FDM printing

Ceramics pellets for CIM processes

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Case of Study

Ceramic Filaments for Lithium Batteries

LTO | LCO

- Porosity control through the addition of nanocharges
- Electrochemical performance comparable to porous electrodes (1 mm thick) fabricated using Spark Plasma Sintering

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Case of Study

Our technology in Li-Ion batteries

Fabrication Technology	Active Material for Electrodes	Specific Capacity (mAh/cm^2)
Casting	Lithium Cobalt Oxide	3.40
3D-FDM (Print3D)		**17.7**
Casting	Lithium Titanium Oxide	1.43
3D-FDM (Print3D)		**11.3**

- Electrode 100 % ceramic – Higher specific capacity
- Porosity control through the addition of nanocharges
- Possibility of adding conducting nanoadditives

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Grants and Recognitions

The Center of Industrial Technological Development (CDTI), dependent of the Ministry of Science and Innovation has awarded a grant to **Laboratorio Print3D Solutions CLM, S.L through the program** NEOTEC 2018.

The Ministry of Science and Innovation proceed with the registration of **Laboratorio Print3D Solutions CLM, S.L with** NIF B02589786 in the innovation SME **Registry on the application submitted on** December 23rd 2020.

The Company has received a loan from **IFCLM** of 33.686,24 € - which begins to be amortized in 2021 - from la Comunidad de Castilla la Mancha an aid for the investment in a high vacuum sintering furnace for the development of the ceramic filament research line.

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The Team
Blend of knowledge & experience

Inés Leopoldo Merino
CEO

Electronic Engineer UTN *- IESE – Telefónica – YPF*

Jose Antonio Reglero Ruiz
CTO

PhD Material Science University of Valladolid - Université de Bordeaux - CEMEF-Mines Paristech - University of Burgos

Inés Blanc Acebal
R&D Manager

Degree in Chemistry University of Valencia - Pavagua - Aimplas

We are prepared to continue transforming the cutting-edge industries.

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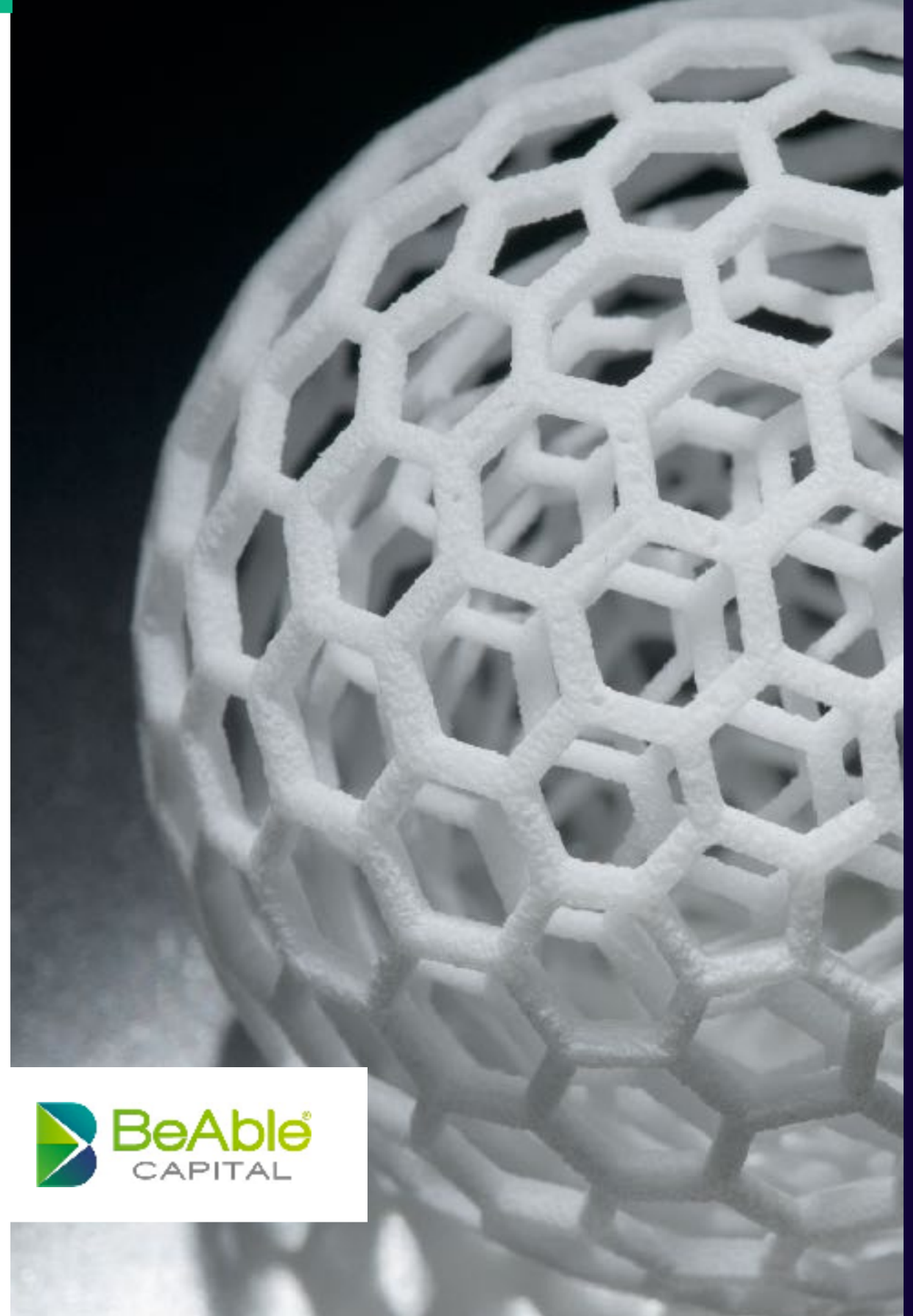
Our Investment **Partner**

The majority partner of Print3D Solutions, is **BeAble Capital,** through its fund **BeAble INNVIERTE KETS FUND FCR** fund specialized in technology transfer.



BeAble Capital invests in business projects very early by getting involved in its invested companies both in the development on its business strategy and in the implementation of its business model and support in the search of investment.

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Contact

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