

# Eureka Globalstars

## Project partners Search Form

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<b>Contact Person Details</b>	
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<b>Organization Details:</b>			
Name: Alkimat Tecnologia Ltda			
Country: Brasil		Website: www.alkimat.com.br	
Type of Organization:	<input checked="" type="checkbox"/> SME	<input type="checkbox"/> Large Company	<input type="checkbox"/> University
	<input type="checkbox"/> Research Inst.	<input type="checkbox"/> Administration	<input type="checkbox"/> Other (specify):
Number of Employees:	<input type="checkbox"/> < 10	<input checked="" type="checkbox"/> 11-50	<input type="checkbox"/> 51-100
	<input type="checkbox"/> 101-250	<input type="checkbox"/> > 250	
<b>Describe the activities, products, services, and expertise of your organization:</b>			
<ul style="list-style-type: none"> <li>• Metal Additive manufacturing equipment manufacturer</li> <li>• Indirect Metal Additive manufacturing (sinter based) feedstock manufacturer.</li> <li>• Metal Additive manufacturing service provider</li> <li>• Metal Additive manufacturing project (DFAM) provider</li> </ul>			

<b>Project Details</b>	
Project Title	Cermet Nanoparticles brake discs laser coating
Acronym	Claddisc
Tech area	Laser material processing
Keywords	Cermet, laser cladding, laser texturing, metal matrix composite
<p><b>Describe your Project:</b></p> <p>Recent studies have demonstrated that a part of the total non-exhaust emission produced by a car derives directly from braking systems. During their use, wear debris in the form of solid airborne particles are created from both disc and friction pads wear. Reducing these emissions by increasing the wear resistance of braking systems would therefore contribute to both decreasing pollution and increasing brake disks life.</p> <p>In this way, hard metal coating of gray cast iron brake discs that no requires changes to the base material nor to the processes used to manufacture it are being researched. In this way the cast iron components, which generally have only limited durability, are enhanced by a hard material coating. This coating combines long-term corrosion protection with equally lasting abrasion protection.</p> <p>A new approach whit nanoparticles spray deposition and posterior metallurgical laser bonding in being proposed.</p>	
<p><b>Describe the innovative part of your project:</b></p> <p>Coating deposition on brake disks using laser technology is one of methods employed to enhance the surface properties of the brake disks, such as improving wear resistance, reducing friction, and increasing thermal stability. Laser-based coating deposition offers several advantages, including precise control over the coating thickness and composition, minimal heat input to the substrate, and reduced material waste.</p> <p>A new more efficient process with nanoparticles deposition and posterior laser metallurgical bonding between the coating and the substrate are being proposed with the advantage of minimizing post-processing Machining. At the same time, significantly higher powder deposition efficiency and very fine surfaces can be realized with this process, which saves additional tooling costs.</p> <p>A new process technology is composed for:</p> <ol style="list-style-type: none"> <li>1.- A feedstock of nanoparticles ceramic-metal matrix composites including carbides and transition metal oxides</li> <li>2.- A feedstock spray deposition system for apply the coating in a very uniform and controllable layer.</li> <li>3.- A laser scanning system with optimized energy pattern texture, for metallurgical bonding the grey cast iron brake disk substrate and coated nanoparticles</li> </ol>	

**Describe the market expectations of your project:**

The brake discs are currently a hot topic in the automotive industry, as manufacturers of cars, vans, buses, and trucks must implement the new Euro 7 emissions standard by July 1, 2025. This will place new demands on the coatings of millions of brakes discs.

**Possible Partner Profile:**

Type of Partner Needed (multiple choices are allowed)	<input checked="" type="checkbox"/> SME	<input checked="" type="checkbox"/> Larger Company
	<input checked="" type="checkbox"/> University	<input checked="" type="checkbox"/> Research Institution
	<input type="checkbox"/> Administration	<input type="checkbox"/> Other (specify):

**Describe the expertise of possible partner(s) required for your project:**

- Company with related business in technological services and products for automotive market

**Describe the role of possible partner(s) in your project:**

- Co-develop the application in any area of project.
- Explore the market in EU

**Deadline for Partner Search: 20/04/2024**