

**At the intersection of academia and entrepreneurship in manufacturing: the story of
Özge Akbulut**

Özge Akbulut, the second place winner at the 2023 RIS LEADERS competition, is developing energy-efficient, no-material leak methods for near-net-shaping ceramics, aiming for a circular transformation in the ceramics industry. Her project's technology ensures self-standing, malleable formulations that are highly reproducible, require no expensive molding, and are recyclable without additional energy-intensive steps.

Tell us a little bit about your background.

I am a faculty member of the Materials Science and Nano Engineering Program at Sabanci University, Istanbul. While my academic work on the near-net shaping of ceramics earned me the prestigious EIT Manufacturing RIS LEADERS prize, I am also deeply involved in the entrepreneurship ecosystem. In 2014, I founded [Surgitate](#), a company specializing in designing and fabricating tissue and organ models for surgical training. Our flagship product, a breast model, has set the standard for oncoplasty training worldwide. In the past two years, I am also acting as the Chief Science Officer of Fark Labs (<https://www.farklabs.com/>) which is a global transformation hub for startups and corporates.

Why did you choose manufacturing as a field of activity?

Manufacturing is integral to our daily lives, as it shapes materials into products essential for society. As an engineer, I believe that understanding materials and their transformation into products is fundamental. Working in manufacturing allows me to address diverse scientific and technological challenges across various disciplines, providing a broader perspective on problem solving.

How did you come up with your solution and why do you think our society needs this solution?

Ceramics have been slow to adapt to Industry 4.0 compared to metals and polymers. In my research group, we focus on tailoring materials and manufacturing techniques specifically for ceramics, rather than adapting techniques designed for other materials. This approach ensures cost- and energy-efficient routes for near-net shaping of ceramics, addressing critical gaps in the industry.

What is the most exciting aspect of your work, and what is your next envisaged milestone?

I have strategically aligned my career to maximize impact, with sustainability as a primary focus. My academic and entrepreneurial endeavors are all in alignment, and nurture and complement each other. This interconnectivity, being aware of and most of the time being a part of the latest technology is the most exciting part.

You have taken part in the RIS LEADERS competition dedicated to women innovators in manufacturing. Can you share some advice with women who want to pursue a career in manufacturing?

Amid the accelerated digital transformation post-COVID, the significance of manufacturing has become more evident than ever. We were suddenly in a situation where we were discussing how to fabricate face masks, PPEs for hospitals, and ventilators. The supply-chain crisis that followed put many companies in difficult circumstances as well. Therefore, agile manufacturing practices must be established and these practices also have to be sustainable. This is one of the most intriguing tasks of our era. And who does not like a good puzzle?