Ferrogami: A stronger, origami steel enabling the impossible to be folded through AI.

Ferritico and STILFOLD introduces Ferrogami, a next-generation steel designed to meet the urgent global demand for lower carbon emissions and resource efficiency. This breakthrough material is the result of a shared vision: significantly reducing environmental impact without compromising the foldability, durability and strength that Humanoid Robotics demands.

The Ferrogami material has the potential to enhance humanoid robotics by integrating compliant mechanisms with lightweight, high-performance structures that improve both durability and flexibility. By replacing traditional rigid frames with STILFOLD's curve-folded origami design, Ferrogami enables smoother movements, reduced mechanical complexity, and improved energy efficiency.

Ferrogami's fatigue-resistant properties ensure a long lifespan for repetitive tasks, while its formability supports sleek, anatomically inspired structures—ideal for industrial automation, humanoid robotics, and human-interactive environments. This innovation paves the way for stronger, more adaptable robots with dynamic motion capabilities that withstand continuous use.

By combining Ferritico's AI-driven alloy design with STILFOLD's patented industrial origami technology, components achieve an improved strength-to-weight ratio. Early analysis indicates that this integrated approach can reduce greenhouse gas (GHG) emissions by up to 30% compared to conventional steel manufacturing. This is achieved through:

• **Minimizing energy-intensive and time-consuming R&D** when developing new materials, thanks to Ferritico's machine learning algorithms.

• **Optimizing material usage and reducing component count** with STILFOLD's advanced folding techniques.

"With Ferrogami, we tackle the steel industry's biggest challenge: how to grow sustainably in a resource-constrained world," says Viswanadh Arigela, CEO of Ferritico. *"By replacing energy-intensive prototyping with AI-driven material design, we can achieve optimal steel compositions faster and with less waste."*

Ferritico's proprietary AI platform digitally analyzes thousands of steel compositions, eliminating much of the traditional trial-and-error process in material development. This significantly reduces raw material consumption and shortens time-to-market.

Beyond its applications in mobility, consumer products, and transportation, Ferrogami holds great potential for humanoid robotics. By integrating compliant mechanisms with lightweight, high-performance structures, it:

• Enhances motion efficiency and structural flexibility.

• Reduces mechanical complexity and component weight.

• Provides fatigue-resistant properties for extended lifespan.

• Enables sleek, anatomical designs ideal for industrial automation, assistive robotics, and interactive environments.

By replacing traditional tooling and rigid frames with STILFOLD's curve-folded structures, Ferrogami allows humanoid robots to move more naturally, efficiently, and sustainably—bridging the gap between structural strength and adaptive motion.

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About STILFOLD
STILFOLD is an innovation company specializing in design and technology inspired by origami. With a foundation in green manufacturing and optimized material usage, STILFOLD leads the way in sustainable and cost-effective production methods.

About Ferritico

Ferritico is a Swedish technology company specializing in AI-driven steel simulation software. Founded in 2016 as a spin-off from KTH Royal Institute of Technology, Ferritico combines metallurgical expertise with advanced machine learning models to accelerate steel development and optimize manufacturing processes. Their cloud-based SaaS platform enables accurate simulations of critical steel characteristics, reducing reliance on trial-and-error methods and promoting efficiency in the steel industry.