



# Company Presentation

August 11, 2023

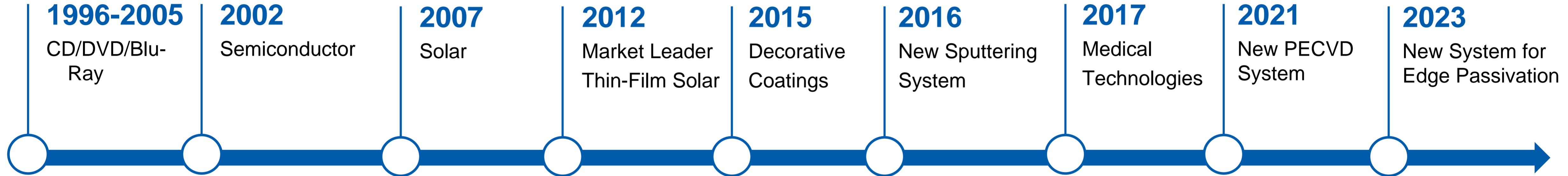


Thin-Film Coating and Surface Treatment

# Where does SINGULUS TECHNOLOGIES come from?

## Start of SINGULUS TECHNOLOGIES in 1995 and IPO in 1997 with Innovative Vacuum Technology

### MILESTONES



SKYLINE  
SPACELINE  
BLULINE



TIMARIS



SILEX



VISTARIS



DECOLINE II



GENERIS PVD



MEDLINE



GENERIS  
PECVD



GENERIS PET

# Financial Key Figures

<i>in million €</i>	<i>1<sup>st</sup> Half-Year 2022</i>	<i>1<sup>st</sup> Half-Year 2023</i>
Revenues	44.2	41.7
Order Intake	33.5	24.1
Order Backlog (30.06.)	104.0	67.2
EBIT	1.5	-0.7
EBITDA	3.5	0.7
Result before Tax	0.5	-1.9
Result for the Period	0.9	-1.8
Operating Cash Flow	-17.5	-20.6
Shareholders' Equity	-30.3	-32.9
Total Assets	77.8	83.2

# Profit & Loss Statement

<i>in million €</i>	<i>1<sup>st</sup> Half-Year 2022</i>	<i>1<sup>st</sup> Half-Year 2023</i>
Gross Revenues	44.2	41.7
Net Revenue	44.1	41.6
Gross Profit (in % of Net Revenues)	11.8 (26.8 %)	11.1 (26.7 %)
R & D	-3.3	-3.1
Sales & Customer Service	-5.3	-4.9
GM & A	-3.5	-3.9
Other Income/Expenses	3.3	0.1
Restructuring	-1.5	0.0
OPEX	-10.3	-11.8
EBIT (in % of Net Revenues)	1.5 (3.4 %)	-0.7 (-1.7)
Net Result	0.9	-1.8
EPS (basic in €)	0.10	-0.20

# Profit & Loss Statement Second Quarter 2023 Versus 2022

<i>in million €</i>	<i>2<sup>nd</sup> Quarter 2022</i>	<i>2<sup>nd</sup> Quarter 2023</i>
Gross Revenues	22.8	25.4
Net Revenue	22.7	25.4
Gross Profit (in % of Net Revenues)	5.4 (23.8 %)	6.4 (25.2 %)
R & D	-1.5	-1.7
Sales & Customer Service	-3.0	-2.8
GM & A	-1.4	-1.8
Other Income/Expenses	3.4	0.1
Restructuring	-1.5	0.0
OPEX	-4.0	-6.2
EBIT (in % of Net Revenues)	1.4 (6.2 %)	0.2 (-2.4 %)
Net Result	1.2	-0.3
EPS (basic in €)	0.13	-0.03

# Balance Sheet

<i>in million €</i>	<i>31.12.2022*</i>	<i>30.06.2023</i>
Available Cash	18.7	17.6
Restricted Cash	3.8	4.1
Total Current Receivables and Other Assets	22.8	29.6
Total Inventories	14.0	13.1
Non Current Assets	18.5	18.8
<b>Total Assets</b>	<b>77.8</b>	<b>83.2</b>
Total Current Liabilities	83.7	69.3
Total Non-Current Liabilities	24.4	46.8
Total Equity	-30.3	-32.9
<b>Equity and Liabilities</b>	<b>77.8</b>	<b>83.2</b>

\*preliminary, unaudited

# Cash Flow Development 1<sup>st</sup> Half-Year

<i>in million €</i>	<i>1<sup>st</sup> Half-Year 2022</i>	<i>1<sup>st</sup> Half-Year 2023</i>
Cash Flow from Operating Activities	-17.5	-20.6
Cash Flow from Investing Activities	-0.6	-1.5
Cash Flow from Financing Activities	17.9	21.2
Total Cash Flow	-0.2	-0.9
Cash and Cash Equivalents at the Beginning of the Period	14.9*	18.7
Effect of Exchange Rate Changes	0.1	-0.2
Cash and Cash Equivalents at the Beginning of the Period	14.8	17.6

\*preliminary, unaudited

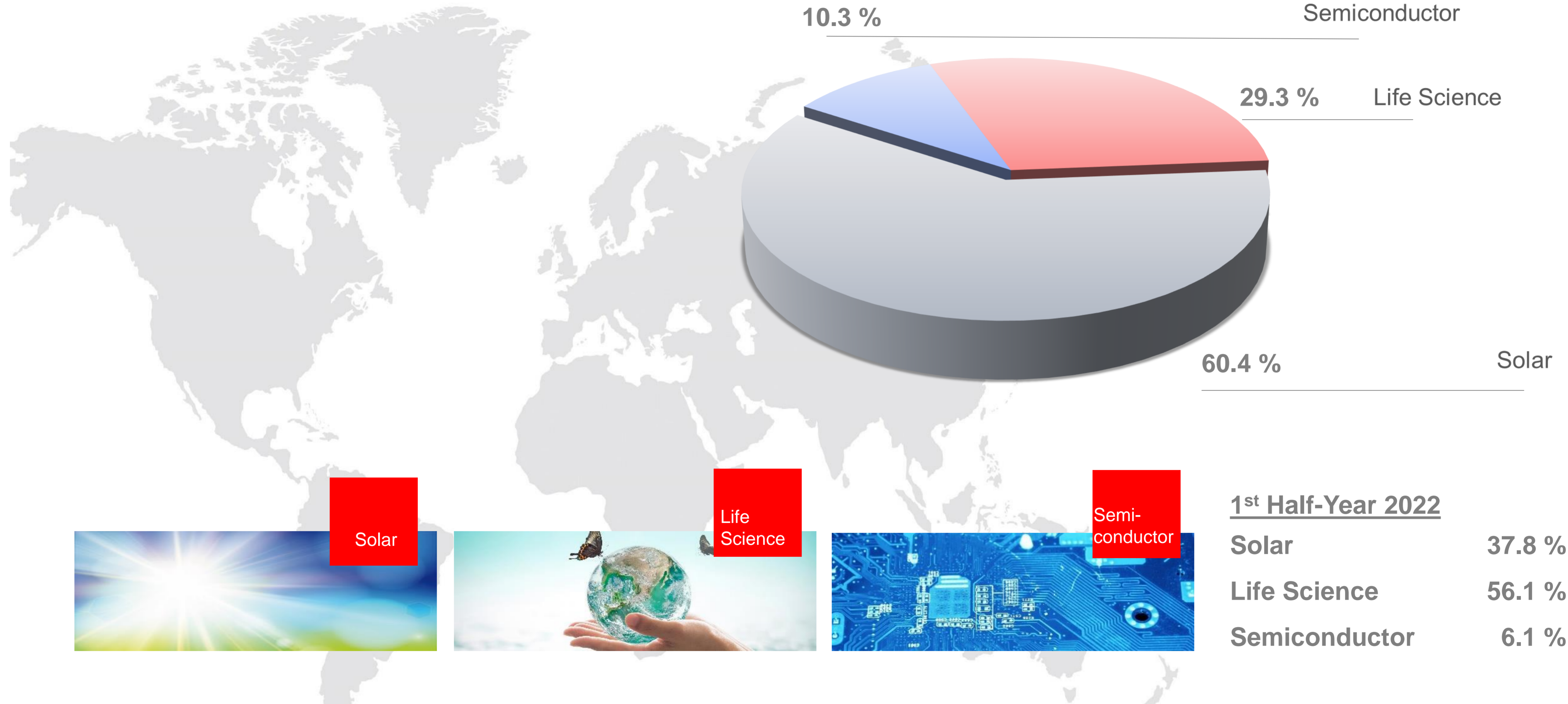
# Employees

	31.12.2022	30.06.2023
SINGULUS Group	321	298
Domestic	272	252
Abroad	49	46





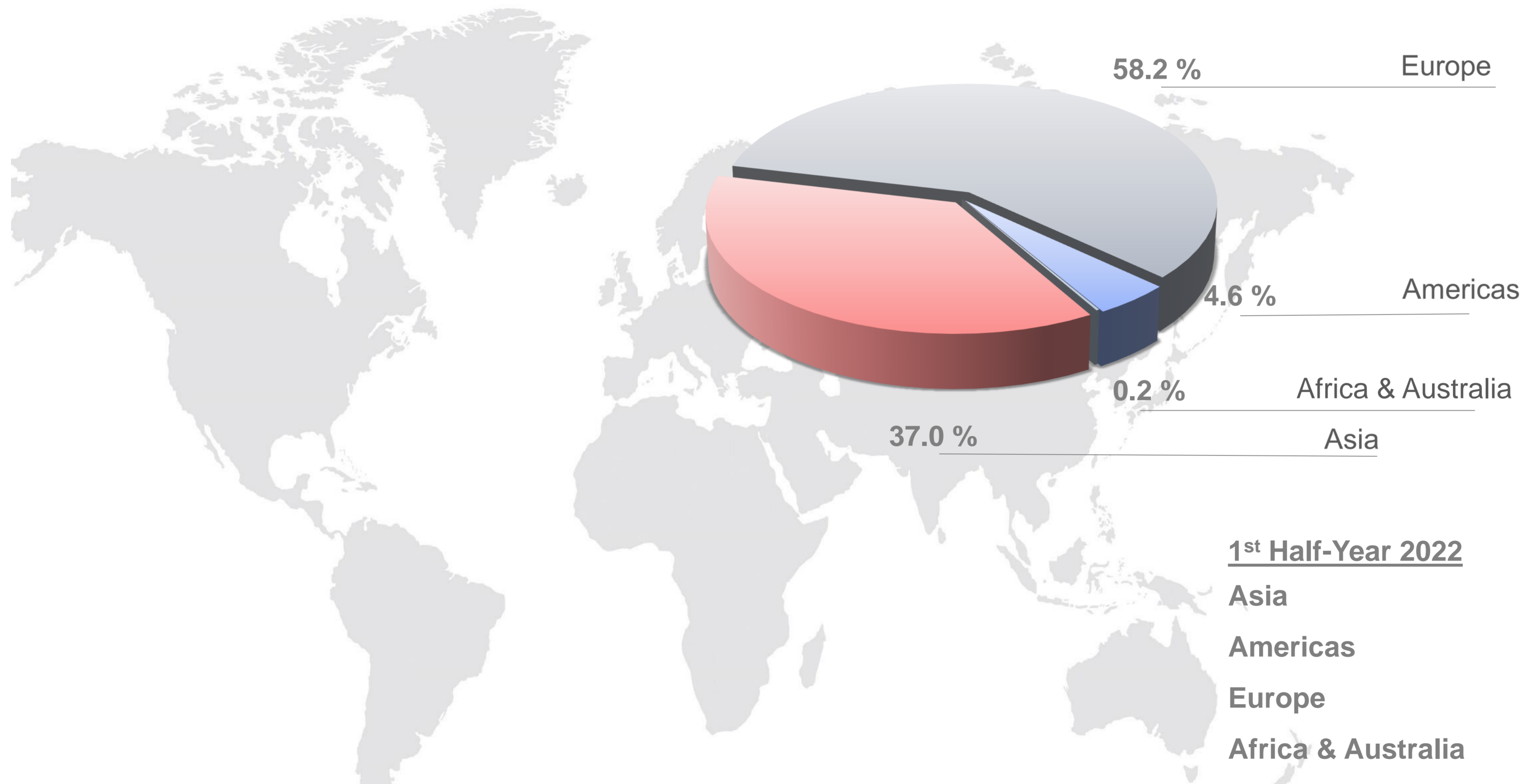
# Sales Split by Segments 1<sup>st</sup> Half-Year 2023



## 1<sup>st</sup> Half-Year 2022

Solar	37.8 %
Life Science	56.1 %
Semiconductor	6.1 %

# Sales Split by Region 1<sup>st</sup> Half-Year 2023



## 1<sup>st</sup> Half-Year 2022

Asia	65.4 %
Americas	11.5 %
Europe	22.9 %
Africa & Australia	0.2 %

## Leverage Technological Advantages and Innovation Across all Segments



Solar

### SOLAR

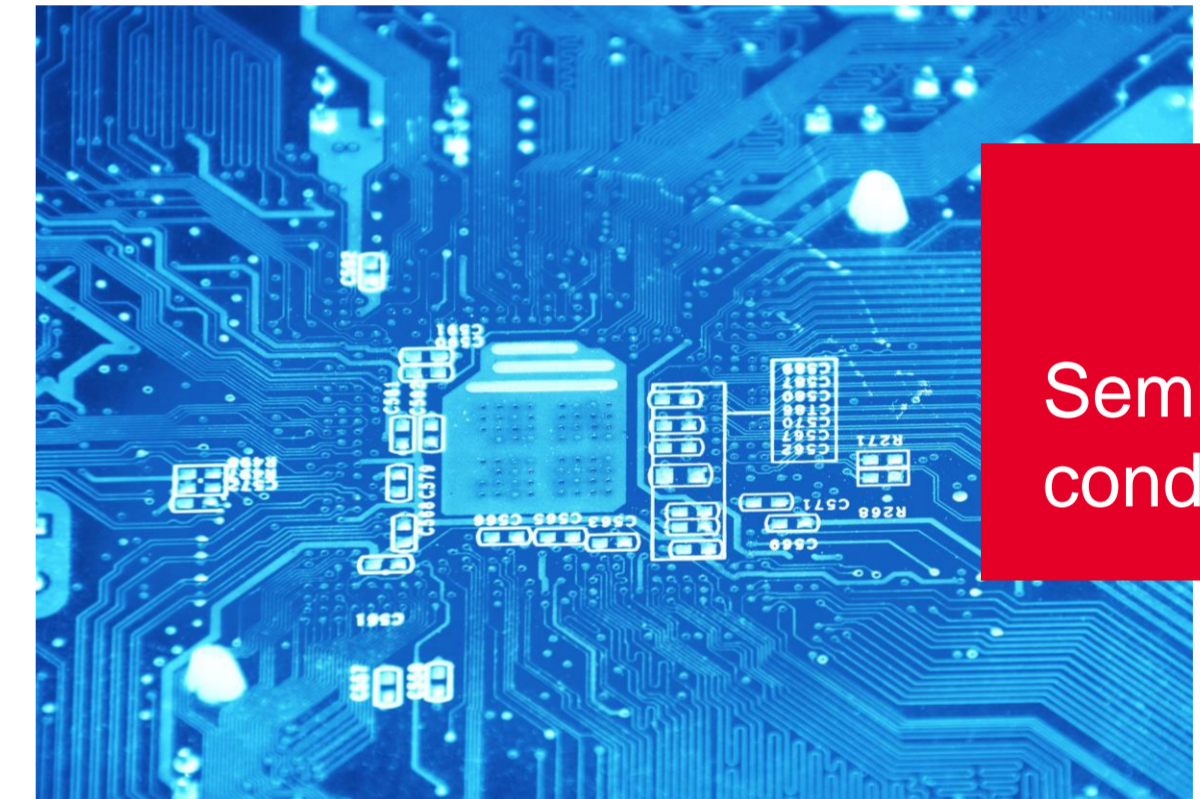
- Crystalline Solar
- Thin Film Solar



Life  
Science

### LIFE SCIENCE

- Medical Technology
- 3D Coating
- 3D Production Line
- Lacquering System
- Data Storage



Semi-  
conductor

### SEMICONDUCTOR

- Vacuum Deposition Cluster Tool

# VISTARIS PVD - Large Inline Sputtering System for Thin-Film Solar & other Glass Applications

The System is using vertical Vacuum-based Deposition of Glass Substrates in various Industries



# Next Generation Production Equipment for CIGS & CdTe Thin-Film Solar

New RTP & CSS Equipment offers the Manufacturer a Greater Output and Lower Production Cost per Watt



# Reliable Production Equipment for High Performance Solar Cells

With Reliable Production Equipment SINGULUS TECHNOLOGIES improves the Cell Efficiency and Reduces Manufacturing Costs



**GENERIS PVD**  
Inline Sputtering System

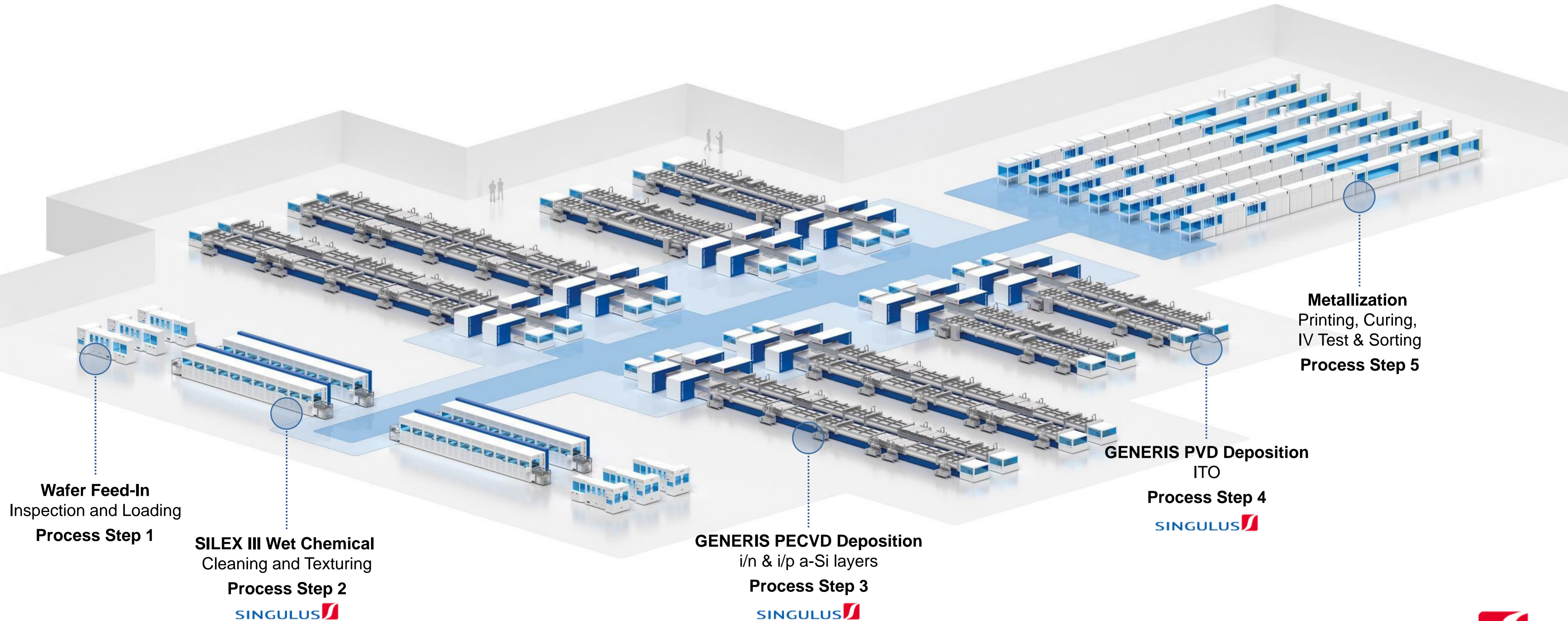


**GENERIS PECVD**  
Inline PECVD System



**SILEX III**  
Wet Chemical System (Batch)

## Schematic Layout of HJT/SHJ Solar Cell Production Line with Key Production Equipment



# GENERIS PET for Passivated Edge Technology for Half Cut and Shingle Cells



By dividing the cells into half cut/multi cut cells and shingle cells the electrical resistance of the metallization decreases, leading to a higher efficiency of the solar modules in comparison to the use of full cells, e.g., M10, G12.



# GENERIS PET for Passivated Edge Technology for Half Cut and Shingle Cells

## Key Advantages and Features



### SYSTEM DESCRIPTION AND FEATURES

- High throughput for edge passivation of different wafer and cut formats
- Excellent passivation layer properties for increased efficiency on cell/module level
- Adaptable carrier and tray design
- Passivation technology enables wafer cutting after cell fabrication
- Retrofittable to existing fabs due to stand-alone machine design
- Payback time less than one year
- High efficiency increases up to 5 % per module

# MATERIA Batch System for Chemical Etching, Cleaning and Drying of Mono & Multi Silicon Chunks and Ingot Off Cuts

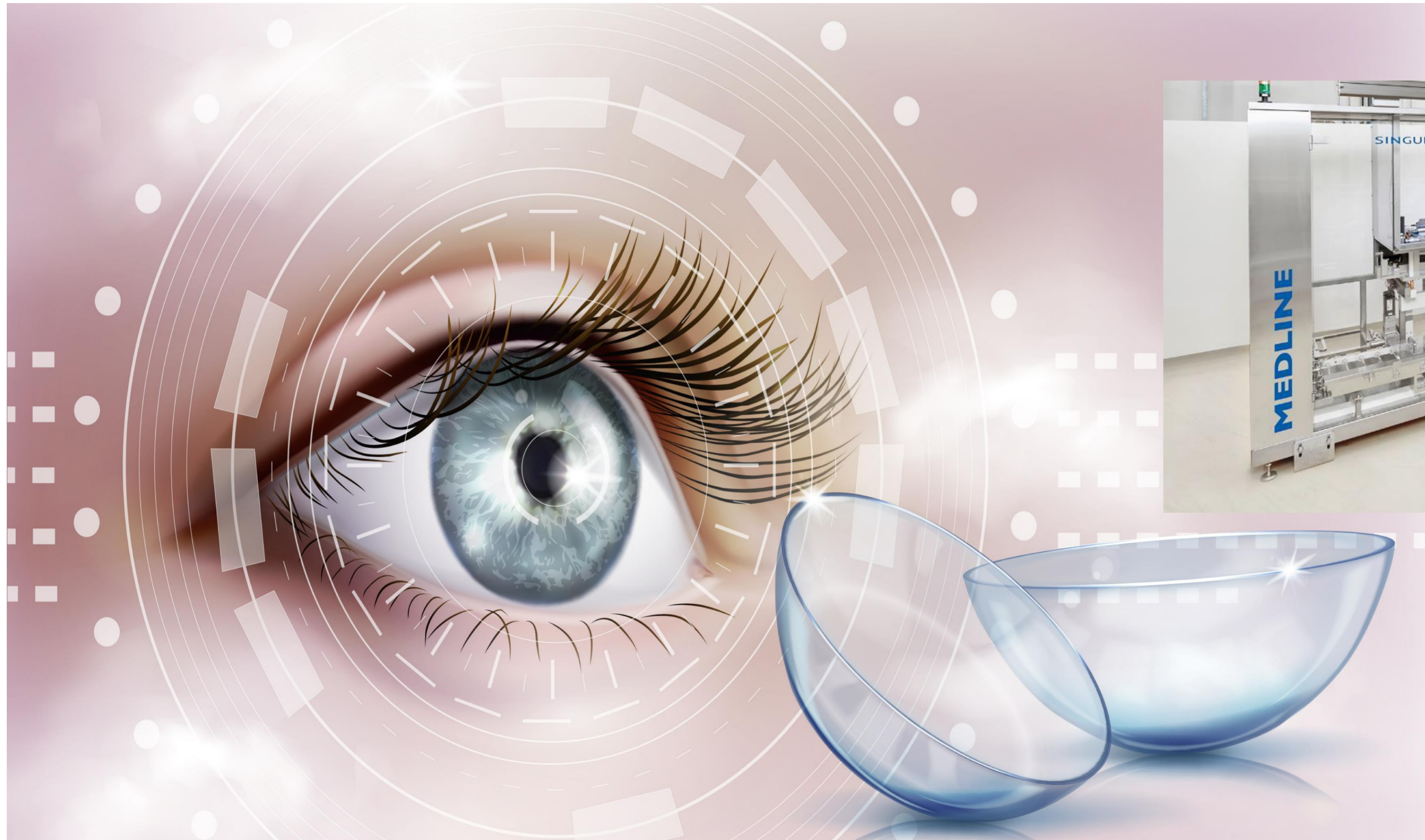


## SYSTEM DESCRIPTION AND FEATURES

- For Solar & Semiconductor applications
- For poly silicon (electronic, solar or UMG grade)
- Chunk sizes between 10 and 180 mm (other formats upon request)
- Throughput: from 500 tons p.a. to 3000 tons p.a. (other upon request)
- Built for non-stop utilization: 24/7, 365 days/year
- High availability (uptime > 95 %)
- Compliance with international safety regulations
- Flexible coupling to adjacent processes
- Carrier return and management system

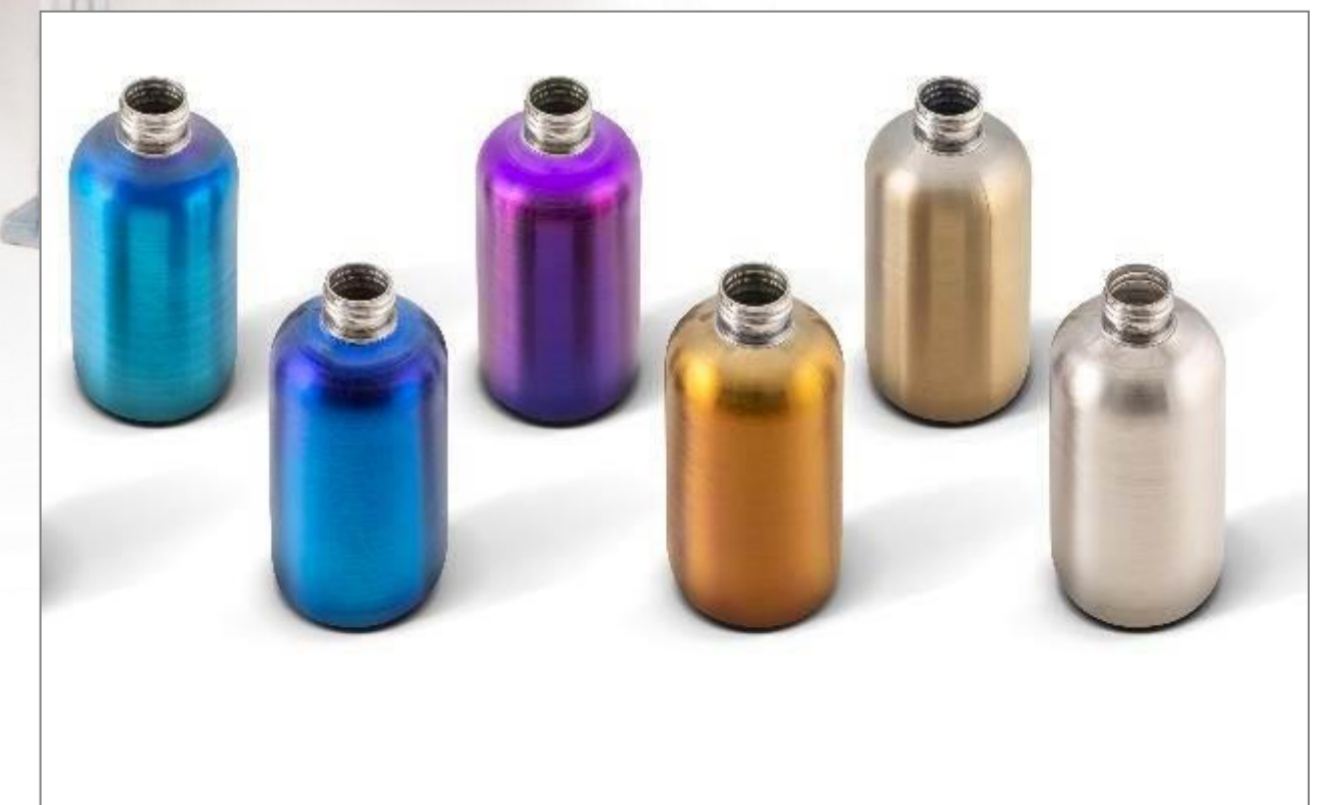
# MEDLINE Wet Chemical System for Eye Glass Lenses

## Production Systems for Medical Technology Following GMP



# DECOLINE II Inline Production System for Sustainable Coating and Lacquering of 3D Parts

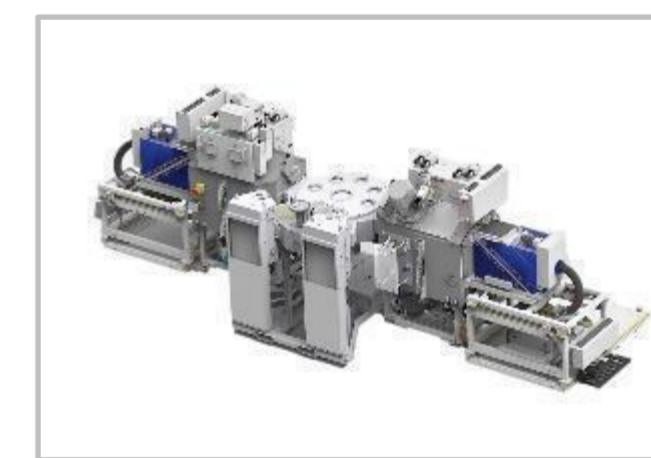
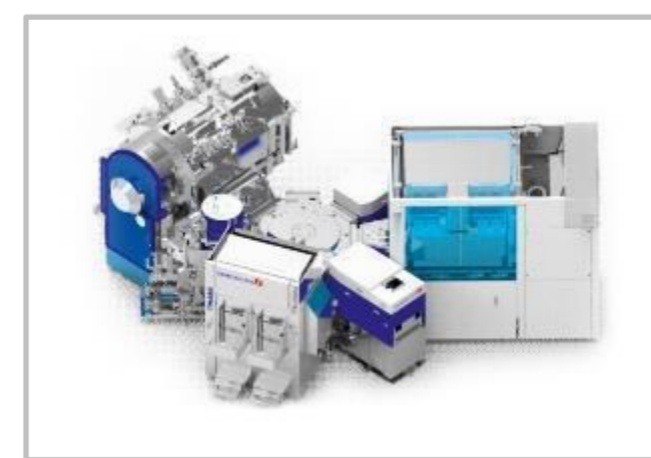
With Cleaning, Lacquering & Sputtering SINGULUS TECHNOLOGIES offers an all-in Solution for Mass Production





### **SINGULUS TECHNOLOGIES**

is a renowned Manufacturer of Advanced Thin-film Deposition Equipment for Magnetic Sensors (TMR, GMR, AMR), Integrated Inductors, MRAM,  $\mu$ LED, Advanced Packaging (RDL/UBM), Interconnects, and other Semiconductor Applications.





### SINGULUS TECHNOLOGIES – Innovations for New Technologies

## Markets



Photovoltaics



Medical Technology



Glass/  
Automotive



Semiconductor



Packaging Industry



Battery/  
Hydrogen

# SINGULUS TECHNOLOGIES starts new Business Area: Vacuum Deposition for Application in HydrogenTechnology

The Use of Hydrogen only makes Ecological Sense if it is about “Green” Hydrogen

For global climate protection and the limitation of global warming to well below 2 °C, the global energy systems must reduce the proportion of fossil fuels in the energy mix to a minimum.

Hydrogen offers a great potential for the electrolysis, industrial and transport sectors and, also in electricity generation.





# Fuel Cell Technology: SINGULUS TECHNOLOGIES works on the Deposition of Bipolar Plates & Electrolyzer

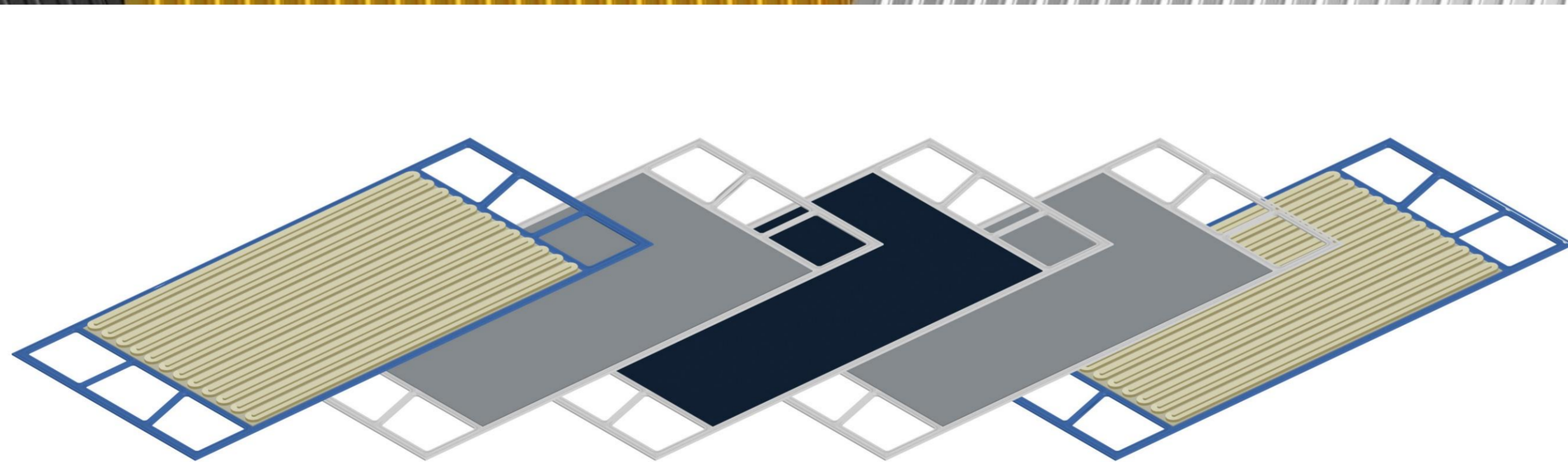
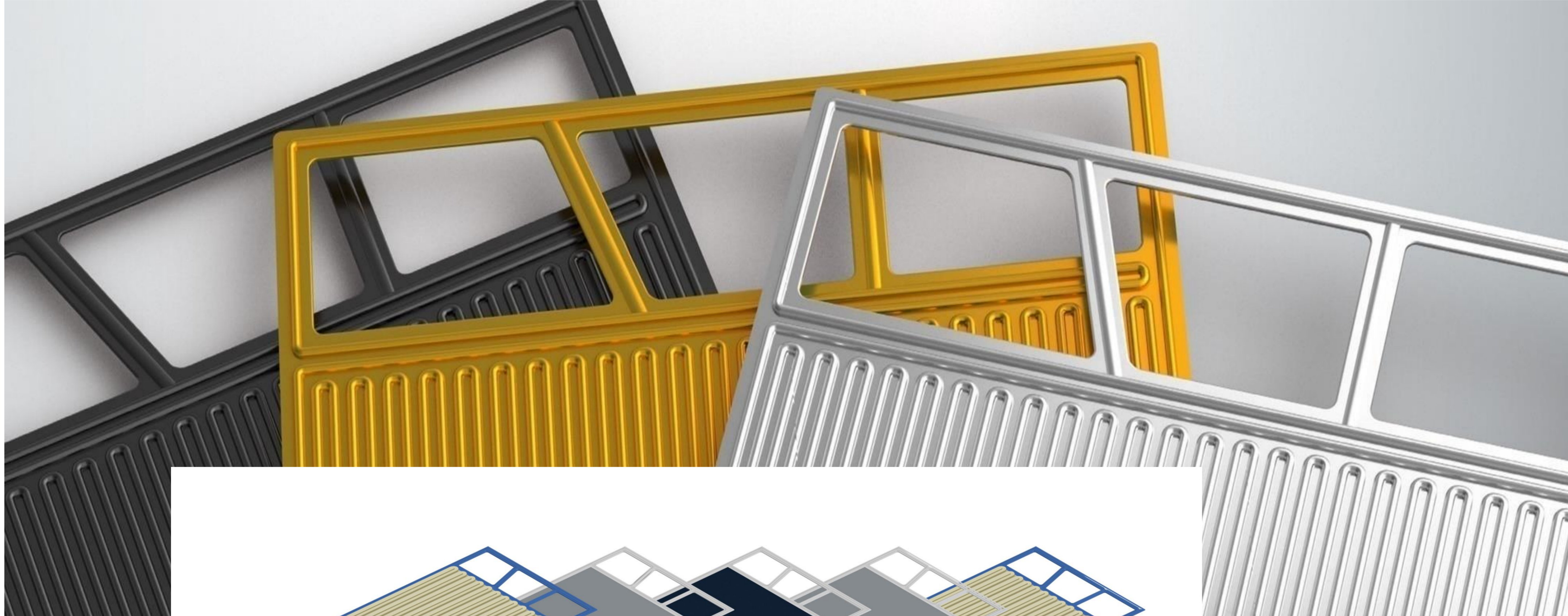
SINGULUS TECHNOLOGIES AG

August 11, -2023

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# Fuel Cell Technology: SINGULUS TECHNOLOGIES works on the Deposition of Bipolar Plates & Electrolyzer



# Production Equipment and Areas of Application



Industry: Chemistry, Steel, etc.



Mobility, Cars, Busses, Transport





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