

Why our Technology?

All electrical applications require low power losses with low electrical resistance and high thermal conductivity. Power losses lead to reduced lifetimes and waste of energy. This leads to a significant waste of energy and the associated CO₂ emissions.

Imagine this: In perspective of your electrical car this generates additional 100km driving distance.

You still have electrical resistances?

NanoWired creates an ideal electrical conductor without electrical resistance. The resulting is pure, monolithic copper joint. This outdates the waste of energy. Joined at:

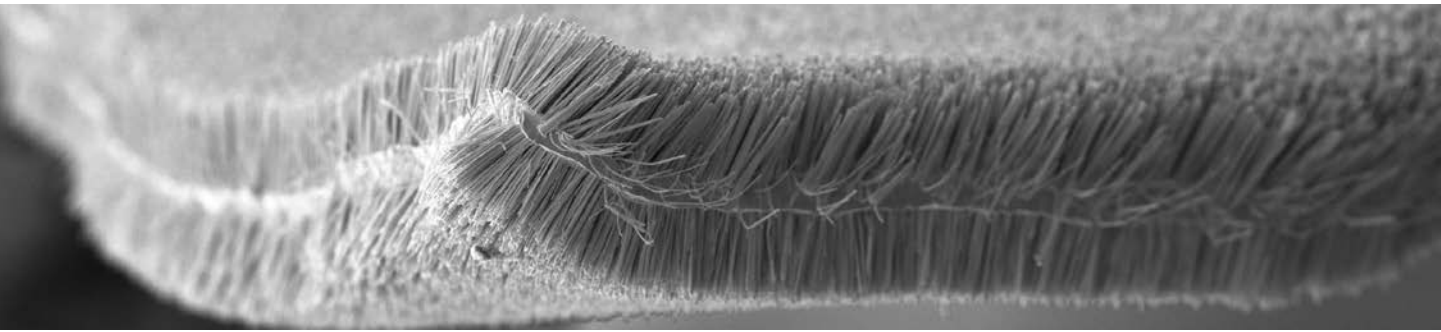
- Room temperature
- Low sintering temperature

Less needed energy in your production line leads to CO₂ reduction.

Or even still have heat problems?

NanoWires perfectly adapt to the contour of the surfaces. This makes the technology a perfect heat conductor.

- Material savings => cost reduction
- Improved energy and heat conduction => higher reliability
- >> 100 W/mK heat conduction



TIER 2	TIER 1	OEM
Added Value ▲ +10%	CAPEX production ▼ ->20%	Cost Reduction ▼ -10-20%
Size of structures ▼ -10-30%	First Pass Yield ▲ 3-10%	Efficiency + Heat Decipitation ▲ +10%
Reliability ▲ +5-100%	No. of suppliers / Material ▼ 5-20%	Reduction of battery Volume ▼ 10-20%

High currents are no limitations










Being a monolithic joint, even high current applications are no problem. While conventional joining methods heat up and break down at high currents, we offer you the best solution. The high reliability is proved in active power cycling tests. No damage to the NanoWiring structure was detected after 120,000 power cycles. $R_{th,w}$ in K/W remains constant over the entire test period. We deliver the best metallurgy of copper especially for SiC or GaN. There is no electromigration issue, no dendrite, no brittleness.

Raise your potential

NanoWiring Technology allows you to:

- Be faster then classical joining technologies.
- Downsize your machine park
- Reduce your energy cost
- Scale down your contacts (3x3 μm)

The more consistent in the use, the greater the performance increase.

 Room temperature joining	 Scaleable Area 3x3μm 300x300mm	 Dry Joining
 Joining time 100ms		 No CO ₂
 Contact Resistance > 1 μOhm	 Heat conductivity >> 100 W/mK	 Up to 60 MPa Shear Force

Who we are?

- Founded in 2017 as a Spin-Off of the technical University Darmstadt
- Headquarter in Germany
- Tech-Center in Taiwan
- Sales Reps in France, Japan, Taiwan and Mainland China.

25 Employees / 20 Engineers:

- 12 FTEs in Technology and Development
- 5 FTEs in Production
- 5 FTEs in Finance / Sales / Customer Support
- 3 FTEs in Tech-Center Taiwan

100+ Years of experience in Production, Engineering and Development in the Fields of Automotive / Semiconductor / Machinery

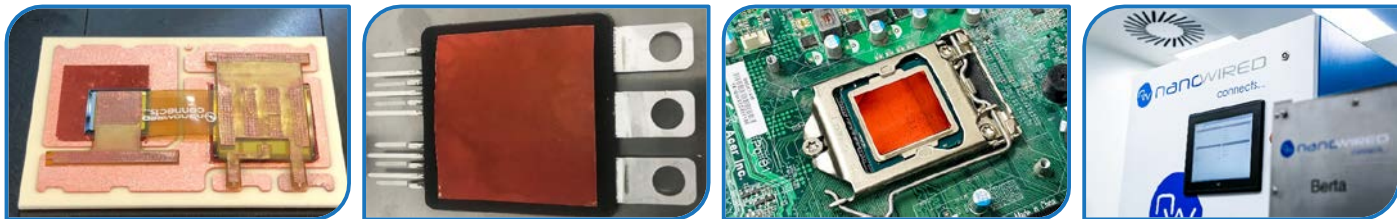
NanoWired is strongly backed by investors and European fundings. Therefore we have secured over 10M EUR from lead investors in Japan, Europe and US, and gained strong support from industry players, such as Honda, Murata, JX Nippon, etc.

Our Traction?

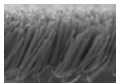














- Addressing market drivers
- Industry challenges and Technology leadership
- Automated NanoWiring-Cube ready
- Strong megatrends boost the technology
- Solid patented portfolio.

NanoWired has secured generic key patents on critical process steps and applications which are difficult to bypass.

“Breaking through the existing limitations in the joining technologies”



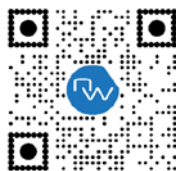
How does it work?

nanoWiring		∅ 30 nm – 4 µm	 1 µm – 50 µm + extensions	 FF: 10 % - 30 %
KleWelding		 Room temperature joining	 Joining time 100ms	 Up to 15MPa Shear Force
KleWinterring		 170°C joining	 Joining time 10s	 Up to 60MPa Shear Force
KleWlueing		 23°C – 120°C used adhesive	 1s – 2min used adhesive	 >10 MPa used adhesive

To know more about our technology, visit <https://NanoWired.de/technology/> or get connected

How to get connected

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