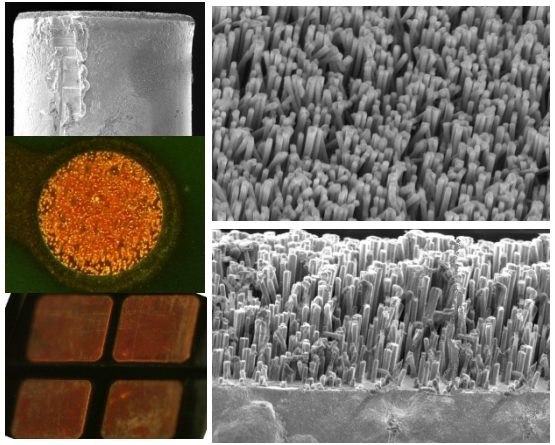
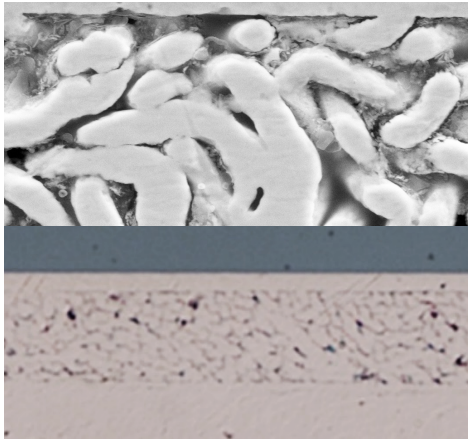
NanoWiring and KlettWelding
Technological revolution for medical technology





8 minutes that can improve your technology

Alle Rechte vorbehalten, auch bzgl. jeder Verfügung, Verwertung, Reproduktion, Bearbeitung, Weitergabe sowie für den Fall von Schutzrechtsanmeldungen., confidential

Break through your limits

- Higher energy densities
- Less space
- Flexible substrates
- Sensitive signal evaluation
- Higher precision in reproducibility
- Pollutant-free materials
- Sustainability

Alle Rechte vorbehalten, auch bzgl. jeder Verfügung, Verwertung, Reproduktion, Bearbeitung, Weitergabe sowie für den Fall von Schutzrechtsanmeldungen., confidential

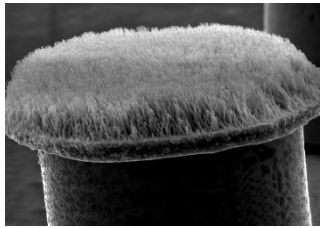
NanoWiring- Three simple steps

nanoWiring

Preparation

Room temperature

Stripping



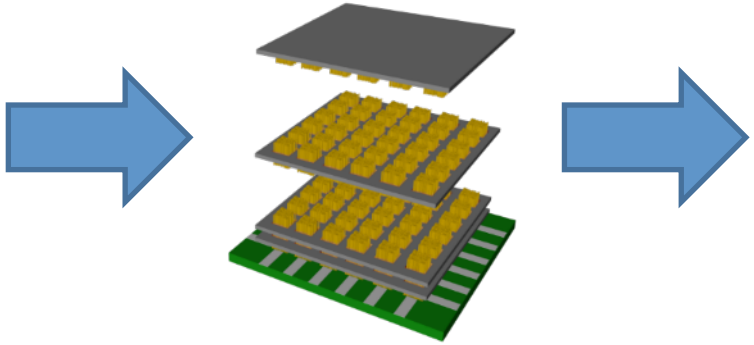
Masks process **Galvanic process** **Cleaning process**

KlettWelding – Three simple steps

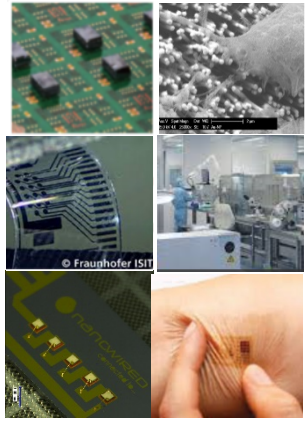
KlettWelding

Room temperature

Adjustment



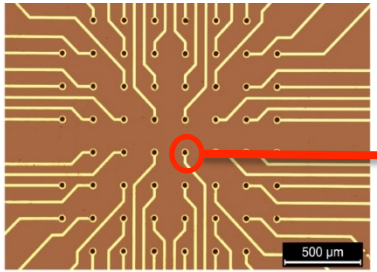
Stacking

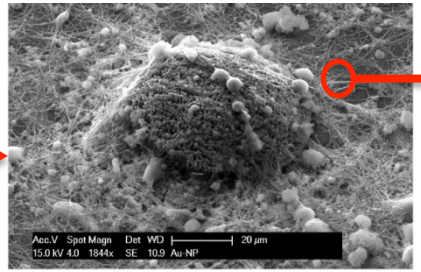


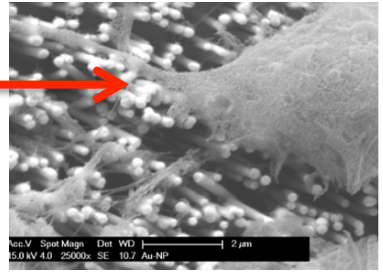
Delivery

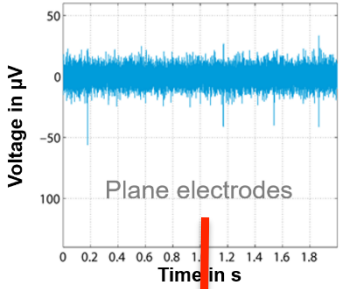
NanoWired boost your bio-electrodes

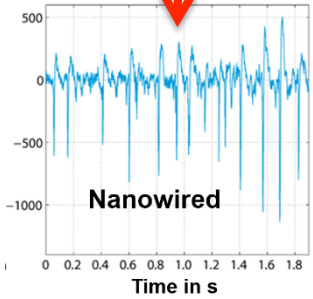
- Factor 14.000 Signal / Noise
- Factor 500 higher surface
- Factor 350 lower impedance
- Ø30 μm electrodes





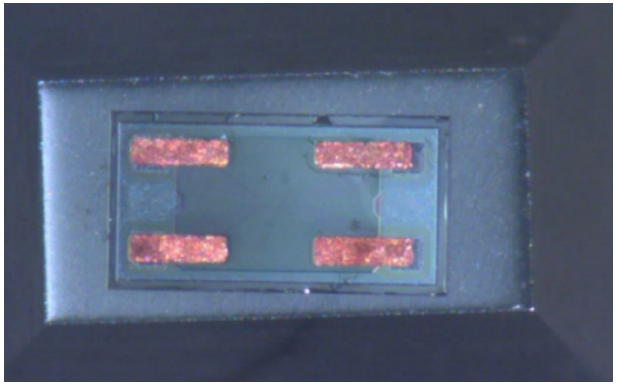


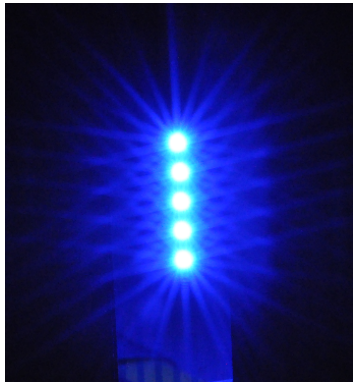


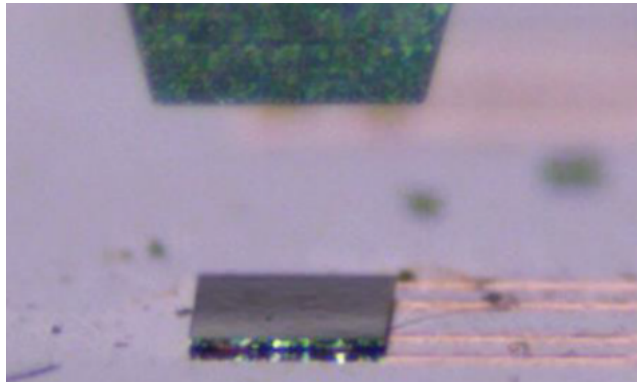


Force-, Temperatur-, Optic- Sensorics

- Contacting very sensitive elements - 20 µm chip thickness
- Contact size smaller than 20µm
- Contacting of freeform surfaces
- Higher precision in the optical axis



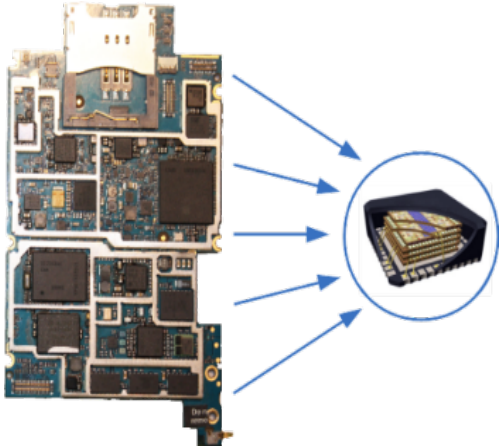




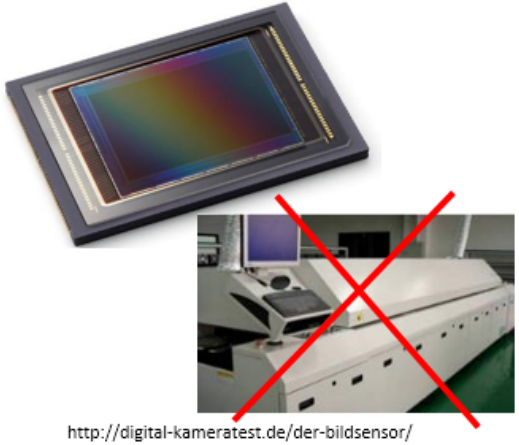
Alle Rechte vorbehalten, auch bzgl. jeder Verfügung, Verwertung, Reproduktion, Bearbeitung, Weitergabe sowie für den Fall von Schutzrechtsanmeldungen., confidential

More desirable benifits

Space and 3-Dimension

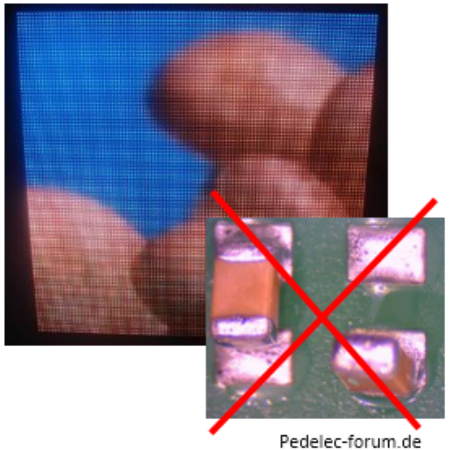


Durability



http://digital-kameratest.de/der-bildsensor/

Accuracy and Precision



Pedelec-forum.de

No Bond wires

No Reflow

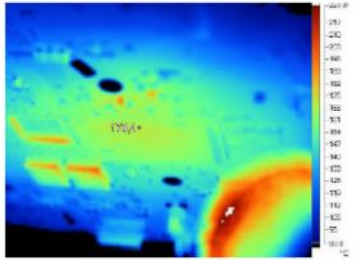
No shrink or movements

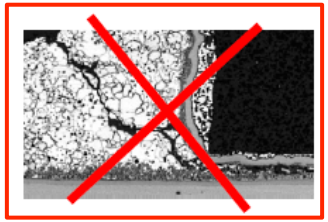
Break boundaries

-50°C >> 500°C

No melting

Grade pure metal





No brittleness

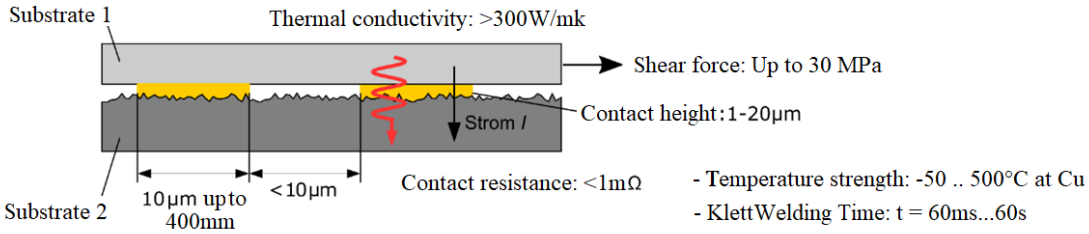
Cu / Au / Ag

Pb – ~~Se~~ - Sb

No environmental damage

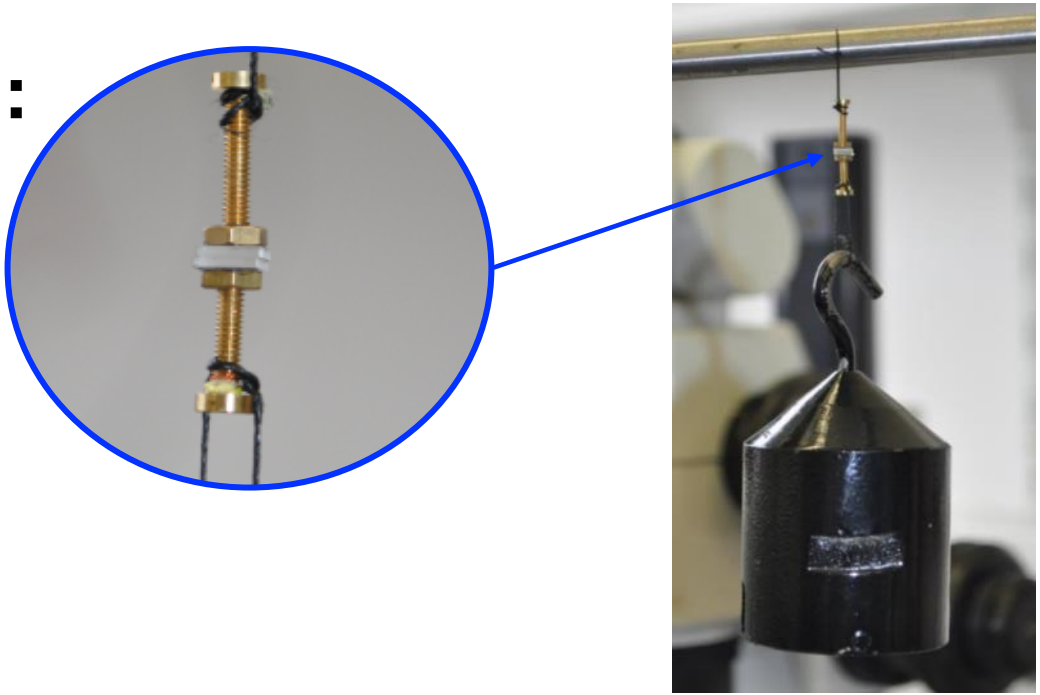
Alle Rechte vorbehalten, auch bzgl. jeder Verfügung, Verwertung, Reproduktion, Bearbeitung, Weitergabe sowie für den Fall von Schutzrechtsanmeldungen., confidential

KlettWelding, connection properties



KlettWelding Force (Bond Force)	**15-50 MPa**
Shear Force	**Up to 30 MPa**
KlettWelding Temperature	**Room Temperature up to, max. 250°C**
KlettWelding Time	**60ms – 60s**
Temperature strength	**-50°C-500°C (Cu)**
Contact resistance	**< 0,001 Ω**
Coplanarity	**ca. 10 µm**
NanoWiring Material	**Copper, Gold, Silver, Platinum, Nickel, Tin,…**
NanoWiring Diameter	**30 nm bis 2 µm**
NanoWiring Length	**500 nm bis 30 µm**
Substrat Material	**Ceramic (LTCC …), Polymer (PI, PCB), Glass, Silicon, Aluminum, Steel …**

A strong connection:

Dipl.-Ing. Olav Birlem, CEO
Dr.-Ing. Sebastian Quednau, CTO

NanoWired GmbH
Merckstraße 25
64283 Darmstadt
06151-1623848
info@nanowired.de