



ZELTWANGER - Core Competencies: Laser processing - Leak Testing - Automation

Nov 2021 | Dr. Rüdiger Brockmann

ZELTWANGER 

ZELTWANGER Group



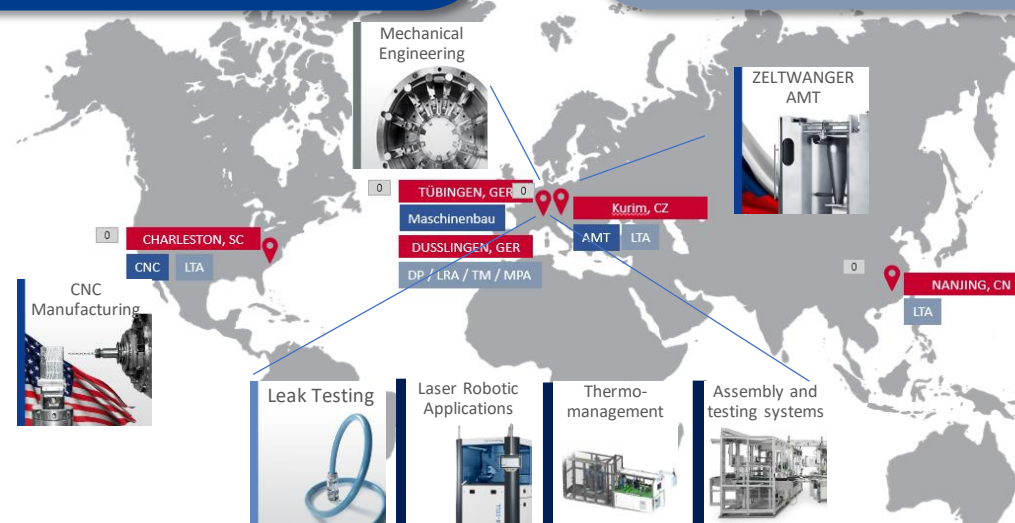
- Family owned Holding organization
- Founded 1982
- 420+ employees, Revenue ~ 70 Mio. €
- Headquarter: Tübingen, Germany

Zeltwanger Contract Manufacturing:

- Industrial services and assembly
- Mechanical manufactured parts and subassemblies of highest precision and complexity
- Prototypes, components, (small batches)

Zeltwanger Industrial Solutions:

- Leak Testing & Automation
- (Manual and automated) Laser Systems
- Workpiece Loading & Unloading
- Production-Equipment for Thermomanagement (condensors, heat exchanger, radiators, ...)



Focus on Laser Technology in Automotive Production



X-Cell Concept and its application



Processes

Laser
Welding

Laser
Marking

Laser
Cleaning

Leak testing
Assembly
Functional
testing

...

Applications

Components
e.g. shift fork

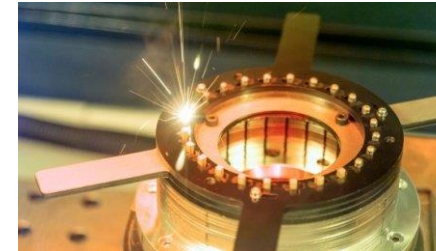
E- Motor

Battery
(Cell to Pack)

Sensors,
Electronics



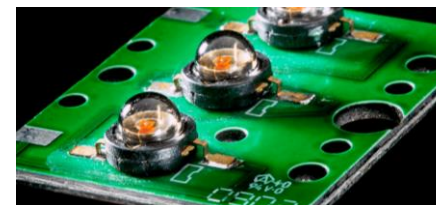
Picture: Selzer



Picture: TRUMPF



Picture: Laseline



Picture: Amada

Conventional

E- Mobility

Challenges

Flexibility

Material

Fixture

Industry 4.0

Adressing the challenges ...



Flexibility

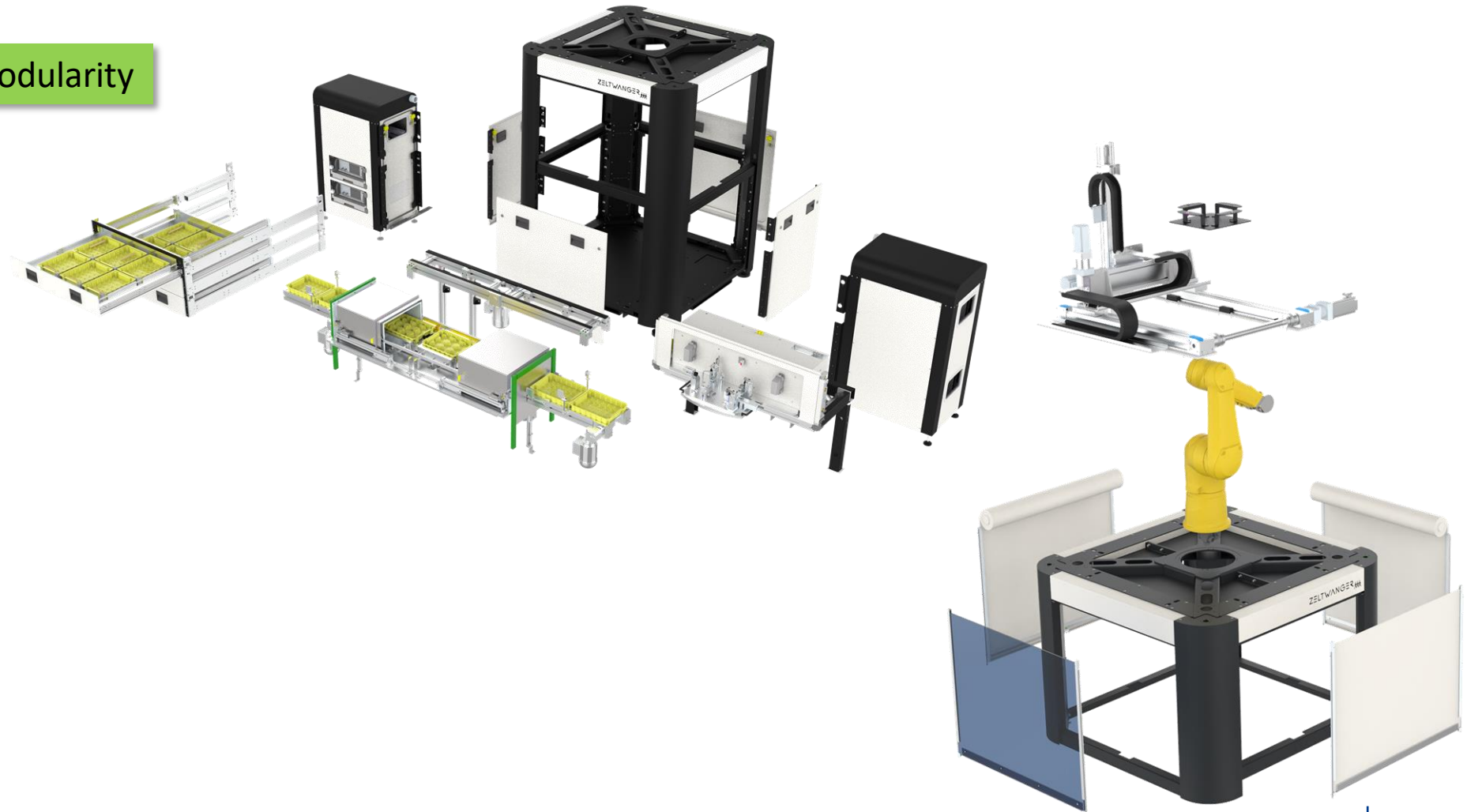


Modularity

Material

Geometry

Industry 4.0



Adressing the challenges ...



Flexibility



Modularity



Material



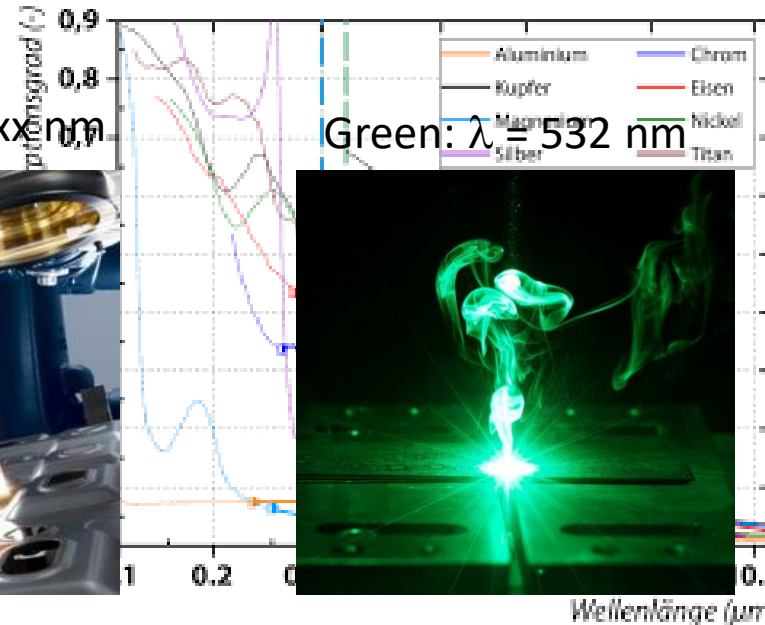
Laser Wavelength

Absorption depends on wavelength

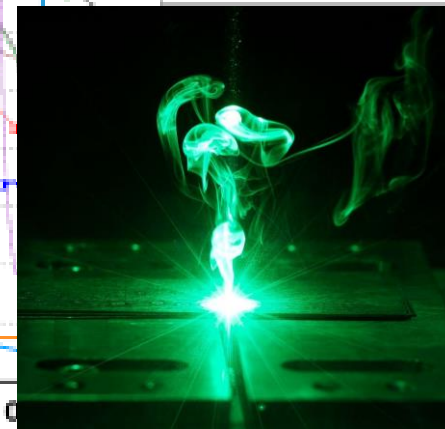
Geometry

Industry 4.0

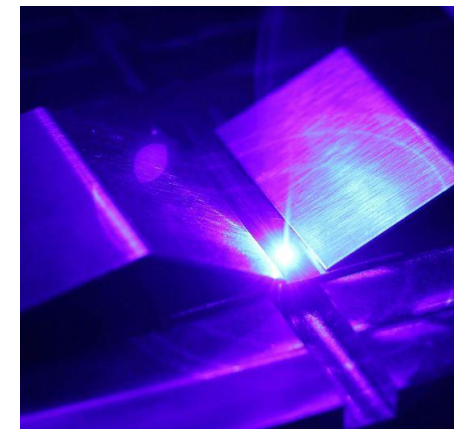
Infrared: $\lambda = 10\mu\text{m}$



Green: $\lambda = 532\text{ nm}$



Blue: $\lambda = 450\text{ nm}$



Adressing the challenges ...



Flexibility



Modularity



Material



Laser Wavelength

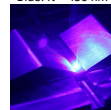
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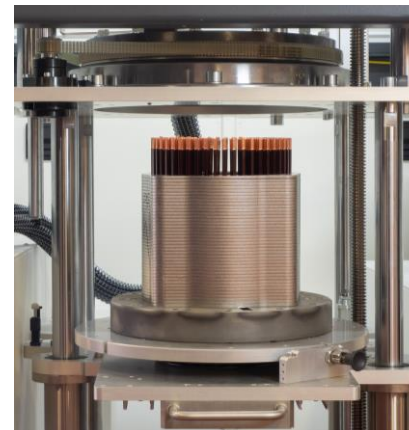
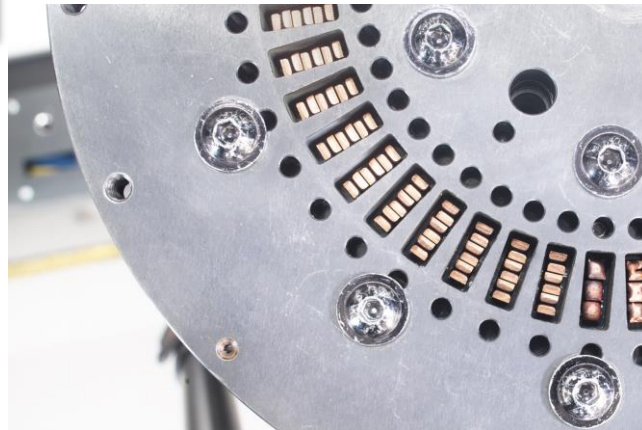


Geometry



Fixture

Zeltwanger fixture for Hairpin Welding (patent pending)



Adressing the challenges ...



Flexibility



Modularity



Material

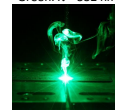


Laser Wavelength

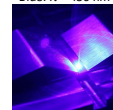
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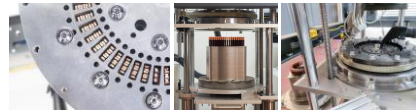


Geometry



Fixture

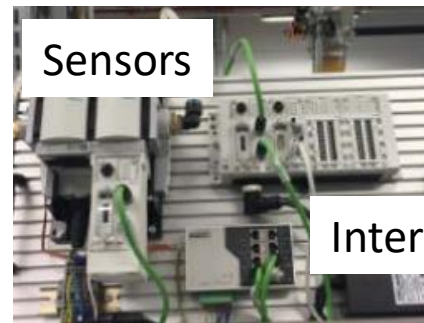
Zeltwanger fixture for Hairpin Welding (patent pending)



Industry 4.0



Predictive Maintenance



Sensors

Interfaces



Analyse

Detection and prediction of seal wear



Adressing the challenges ...



Flexibility



Modularity

ZELTWANGER is providing more than just equipment:

- SOLUTIONS for automotive laser processing

Material



Laser Wavelength

- Partner for joint process developments

Geometry



Fixture

- Pioneer in I4.0 solutions

Industry 4.0



Predictive Maintenance

Our core competencies in leak testing and automation provide the most valuable benefit in your production process chain. → Save money, save time, get efficient solutions for your challenges

More than LASER:

Detection and prediction of seal wear



Thank you very much for your attention!

