

# Elektrifikacija v navtiki in mobilnosti

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*Zahteve po zelenih rešitvah, reciklabilnih in brez ogljičnih produktih so izredno prisotni tudi v navtiki in mobilnosti.*

*Predstavljeni bodo trendi in izzivi na področju elektrifikacije in digitalizacije električnih sistemov za navtiko in električnih sistemov za kolesa.*

## Agenda:

- Podjetje
- R&D
- Elektrifikacija v navtiki

# Company vision

Your partner  
**for best drive  
solutions**



**PODKRIZNIK**  
group



**Headquarter** of Podkriznik group  
**Research and Development center** of  
Podkriznik group  
**Manufacture** of drive systems and  
modules, metal and plastic technical  
products



Manufacture of **hydraulic** valves,  
modules and components  
Manufacture of high precision **geared  
parts and modules**



**Marine division** of Podkriznik group  
- electric propulsion systems

# Company on the map

**SALES INCOME**  
22 MIO EUR

**EMPLOYEES**  
100



27.600 m<sup>2</sup>



*Germany*  
OBER-RAMSTADT



**SALES INCOME**  
20 MIO EUR

**EMPLOYEES**  
170



48.000 m<sup>2</sup>



*Slovenia*  
NAZARJE

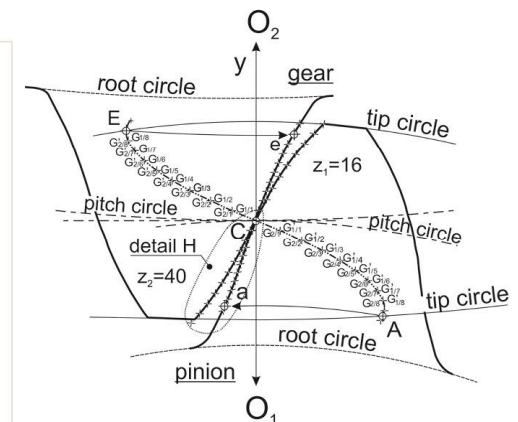
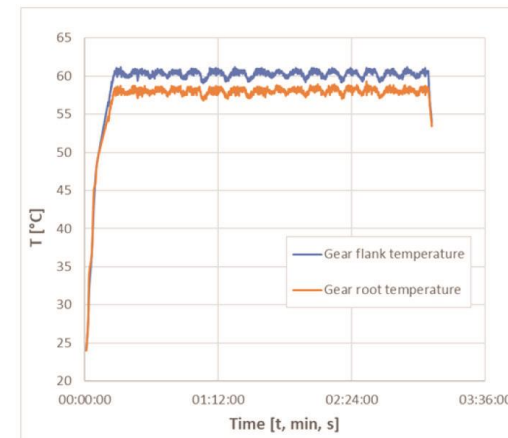
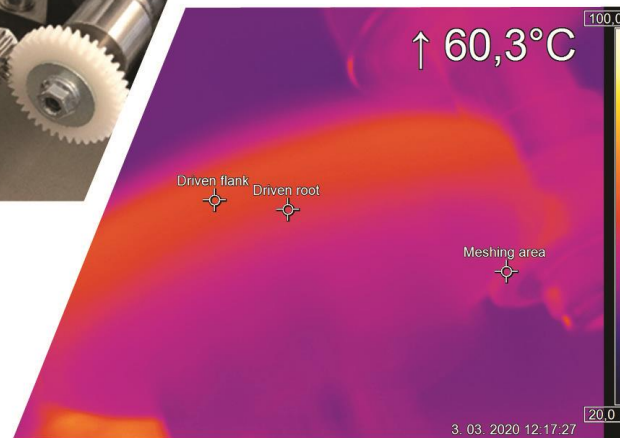


# Research

*Research technical polymer materials and new gearing shapes for best performing gear system designs.*

**Fundamental researches on advanced polymer materials for gears on the own-built testbenches with aim to characterize suitability of lightweight materials and different tooth shape profiles for selected applications which is quality guideline for advanced development of power transmission systems.**

- Lifetime testing of polymer gears with different tooth shape profiles (Involute our own gear shapes (S-gears)).
- Lifetime testing of polymer gears according guideline VDI2736 (near time monitoring temperature spot flank/root measurements).
- Characterization of gear wear.
- Processing results in KISSsoft (Plastics Manager) and obtain Wohler Curves.
- Close collaboration with research partners in the field of materials, technologies, testing, simulations, ...

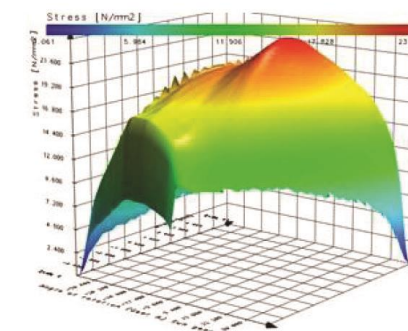
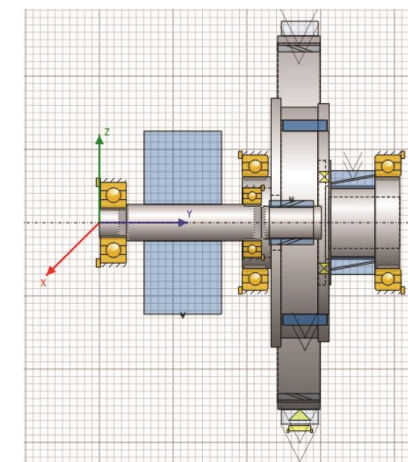
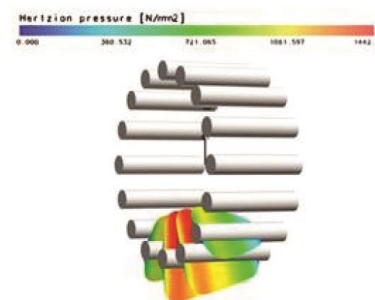
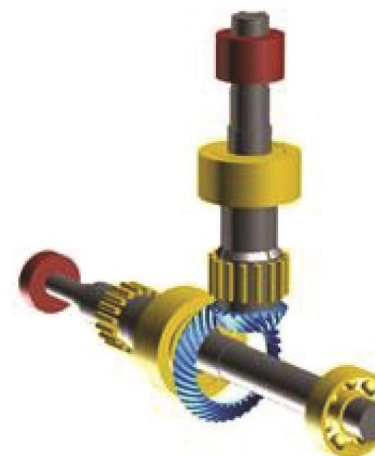
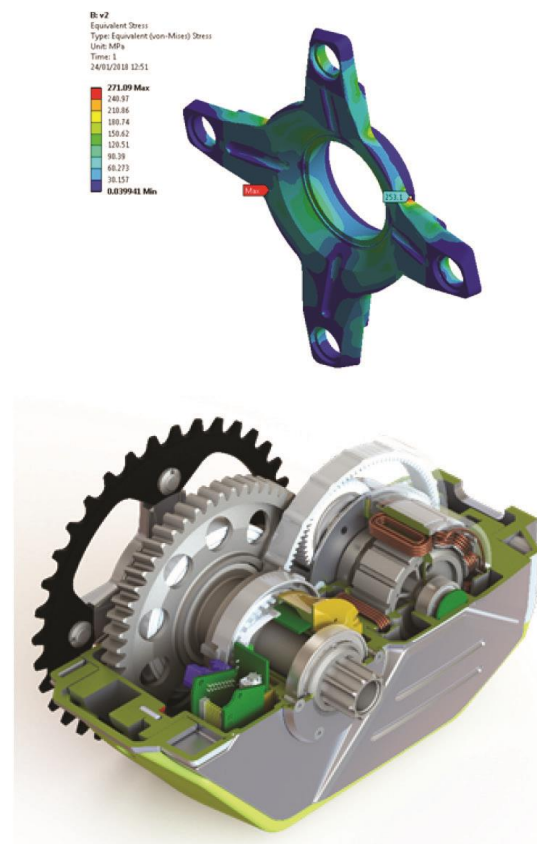


# Development #2

*Calculations, virtualizations and simulations as a base for advanced concepts and designing of best performing intelligent drive systems.*

## Knowledge for modeling, simulations, gear system calculations and mechatronics

- 3D modeling (Solidworks)
- Gear, bearing and shaft analysis (KISSsoft and KISSsys)
- FEM structural and thermal analysis
- Mechatronical system development (internal development including close collaboration with partners with specific know-how for sensors, electronics, el-motors, etc.)



# Izzivi v električni mobilnosti: navtika in kolesarstvo

Glavni izzivi v električni mobilnosti na vodi in na kopnem:

- Inovativni koncepti
- Modularnost
- Baterije za večje dosege
- Reciklabilnost

Naš glavni fokus je visok nivo inoviranja na področju brezgljičnih rešitev in „zero waste“ proizvodnja.



*Product application:*  
**E-mobility**

- *Drive systems for e-boats*

**Baterije:**  
0,5 – 10 kWh

**Napetosti:**

- 48 V (low voltage)
- 96 V

**Zunanji motorji:**

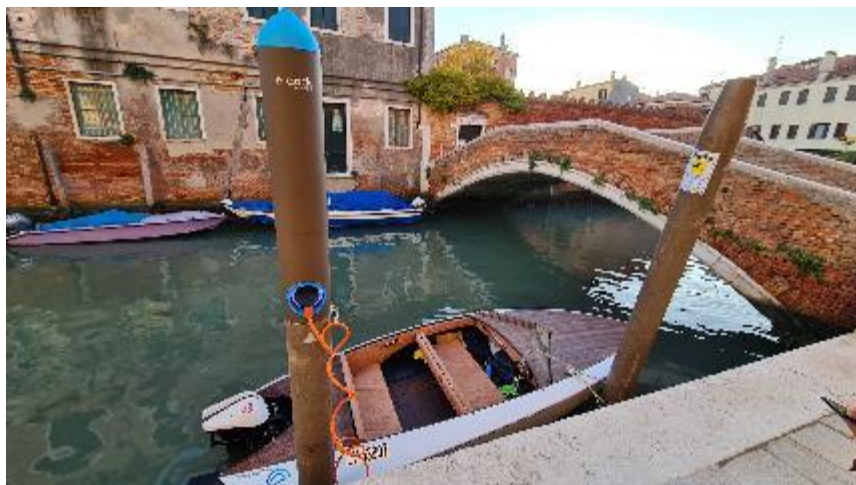
- 2 - 25 kW

**Notranji motorji:**

- 10 - 150 kW







Kaiser – K5.2: Prva javna polnilnica v Benetkah v sodelovanju z našim partnerjem e-concept (Benetke).



Viking – 550 C: Nameski čoln za soniranje dna pri hidroelektrarnah (Slovenija).



Speedwave – SP7.0: Električno plovilo z vgrajenimi sončnimi celicami (Švica).



VSR Lab – VSR 6.0: Električni čoln z vgrajenim agregatom.

Z rešitvami Edyn smo bili prisotni na e-regati v Benetkah 2021-2022.

Dosegli smo skupno zmago v tri dnevni električni regati, na področju vzdržljivosti in hitrosti.

[www.edyn-marine.com](http://www.edyn-marine.com)

## Rezultati tekmovanja

**Skupna zmaga:**

**1st PLACE: e'dyn 1120**

**2st PLACE: Anvera e-laboratij**

**3st PLACE: Madonna della Madia II,  
Laburna**



# Električna mobilnost: električni sistemi za kolesa



**DOMEL**



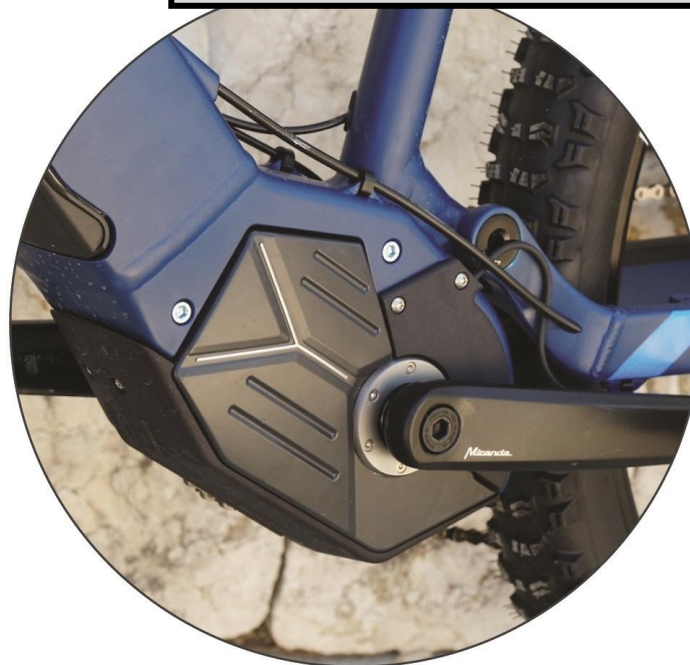
Product application:  
**E-mobility**



- Drive systems e-bikes



Produkt je bil predstavljen na  
**EUROBIKE**





PODKRIZNIK  
group

Naša rešitev na različnih MTB kolesih na trgu:



Our main partners

