

excellence in ...
plastics simulation
testing equipment
lightweight products



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The new chapter of universal material testing

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Where we are coming from...

◀ **IMPETUS**

efficient dynamic testing

plastics and composites

key specs

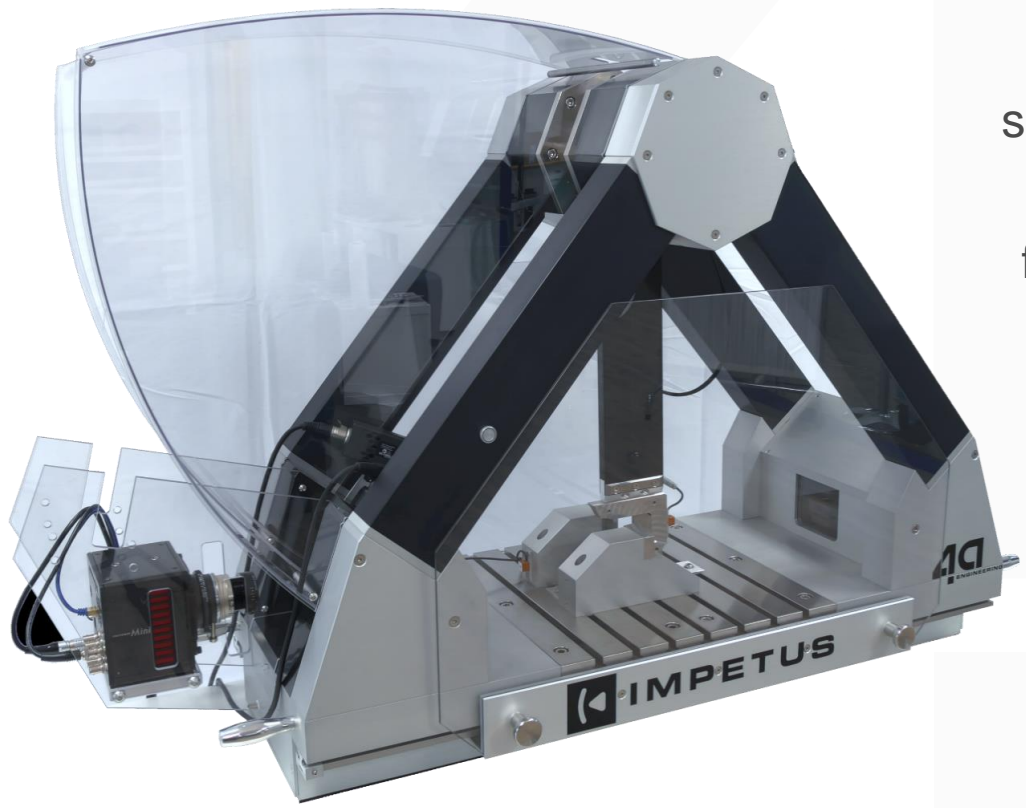
- desktop testing device
- ready to use
- focus on dynamic testing of plastics
- instrumented high speed testing
- measured → force / displacement
- impact speed 0.5 – 4.5 m/s
- maximal energy up to 50 J
- high speed camera
- sync. recording
- combination with VALIMAT → most productive environment for material card generation

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Where we are coming from...

◀ IMPETUS



speed range

force range



5kN

➔ dynamic regime

plastics

Quo vadis...



✓ everything you need for complex material characterization on a single machine

0.0001 m/s - 3.2 m/s

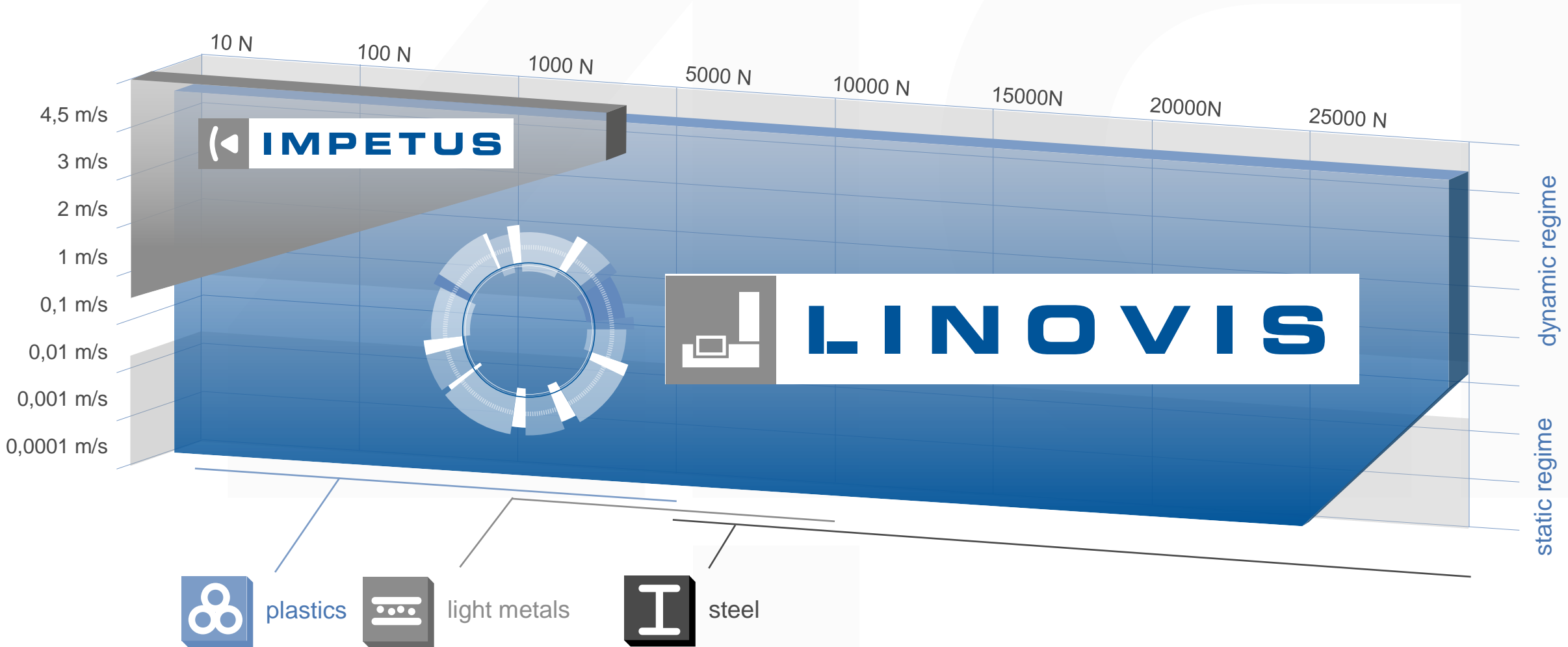


25kN

- dynamic regime
- static regime
- cyclic regime

- plastics
- light metals
- steel

Why we do it...



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high performance modular testing



specifications

max. force 25kN

max. speed 3.2m/s

max. stroke 200mm

energy 600J

frequency ~30Hz



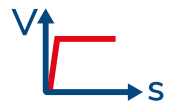
modes of operation



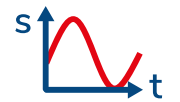
static



dynamic



cyclic



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dimensions

weight

1500kg

x / y / z

320 / 70 / 205cm

power

3 phases 400V



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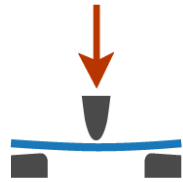


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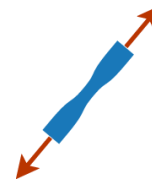
bending tests

e.g.
ISO 178
ISO 7438
...



tensile tests

e.g.
ISO 6892-1
ISO 527
ISO 26203-2
ISO 18872
...



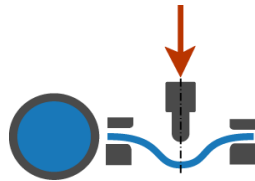
compression tests

e.g.
ISO 844



puncture / impact tests

e.g.
ISO 6603



component tests

e.g.
crash box
...
similar to sled test or
drop tower



special setups

e.g.
K_{IC} based on ASTM E399

fully compatible with IMPETUS test setups

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user interface



testing chamber



high speed camera



servo drive, electronics



drive unit



support structure



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DAQ system

time resolution of 2 μ s for capturing high speed events

force, displacement, temperature, voltage channels

time synchronized high speed cameras

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ergonomics

stool height

direct and fast access to specimen

all controls within short distance

moveable and detachable UI

additional workspace for post processing or preparation

ports for connecting 3rd party devices

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test chamber

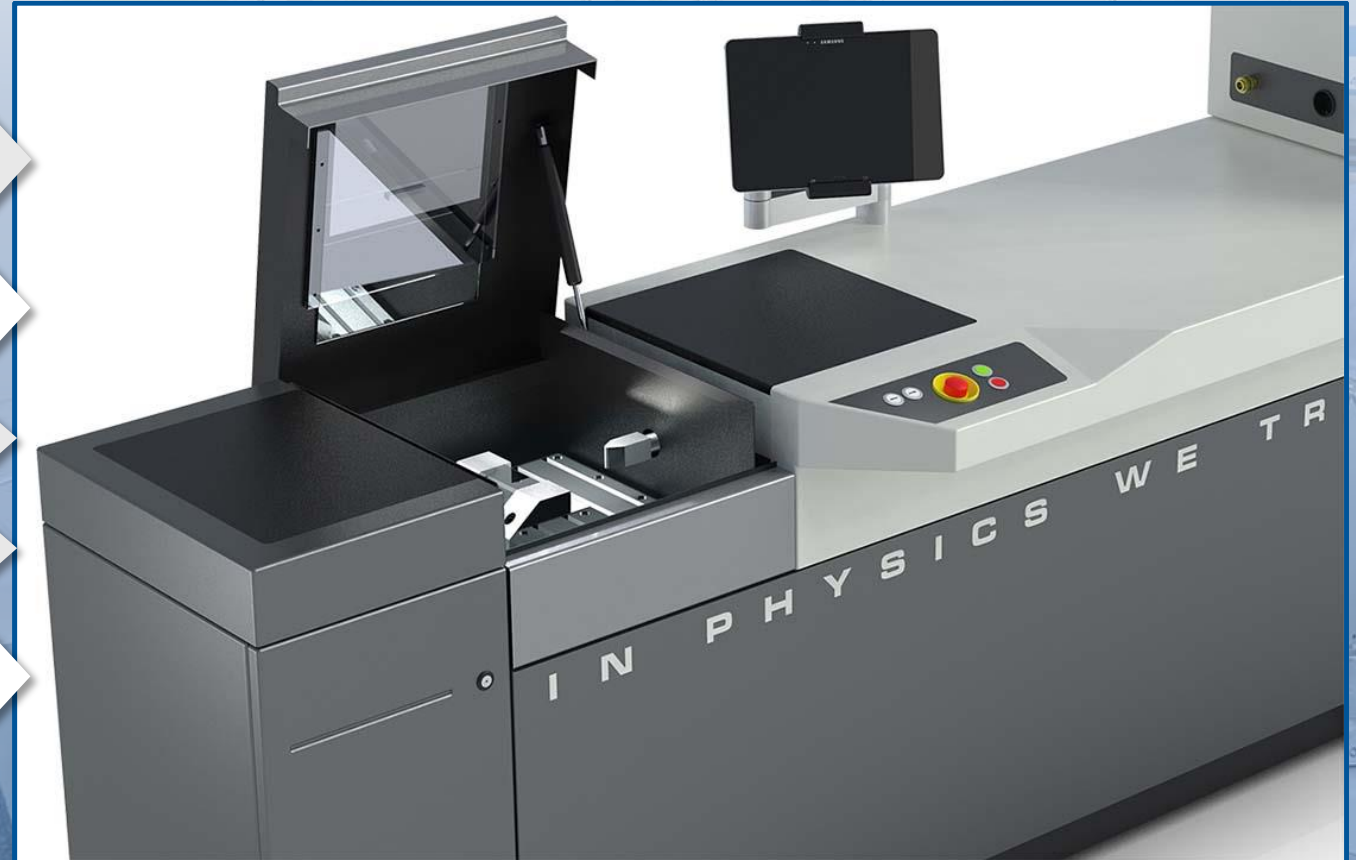
closed during operations

2 stop opening for fast operation

change of specimen

change of setup

observation window with dimming possibility



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modularity

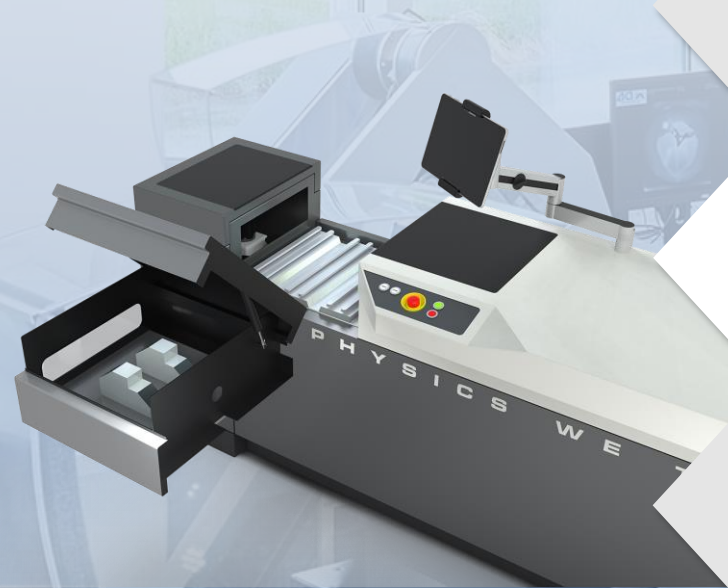
exchangeable test chambers

- fast change of test setups

integration of additional modules

- thermal chamber
- battery test chamber

key for extensive automation



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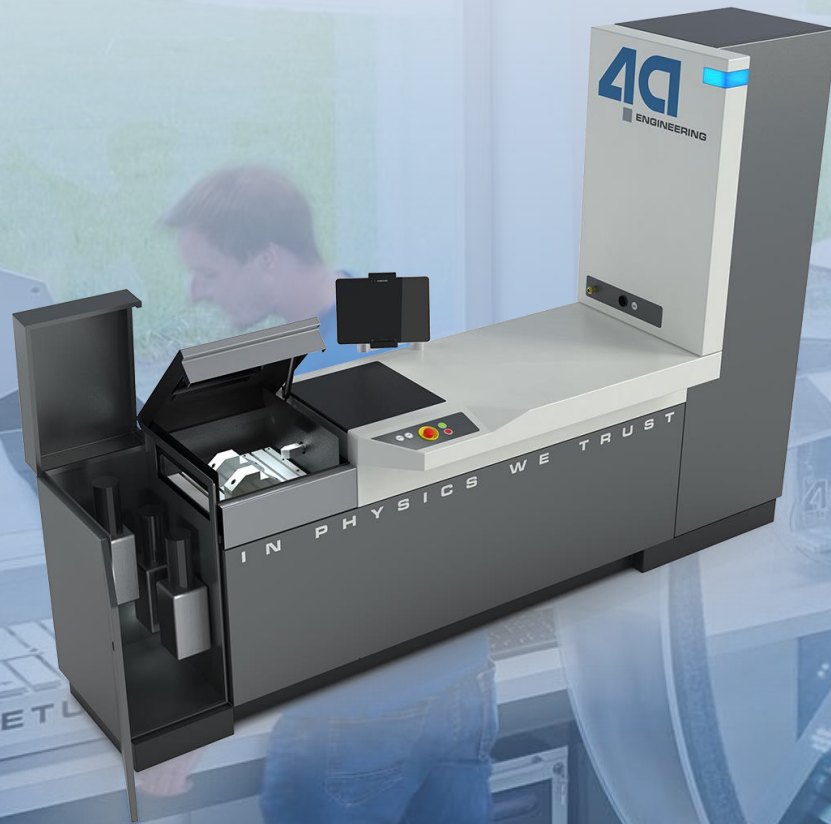




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 seamless DIC integration



integrated mounts for full 3D DIC capability

fully time synchronized with DAQ system

closed environment to minimize external factors (e.g. reflexions)

glare free vision

automated processing of DIC

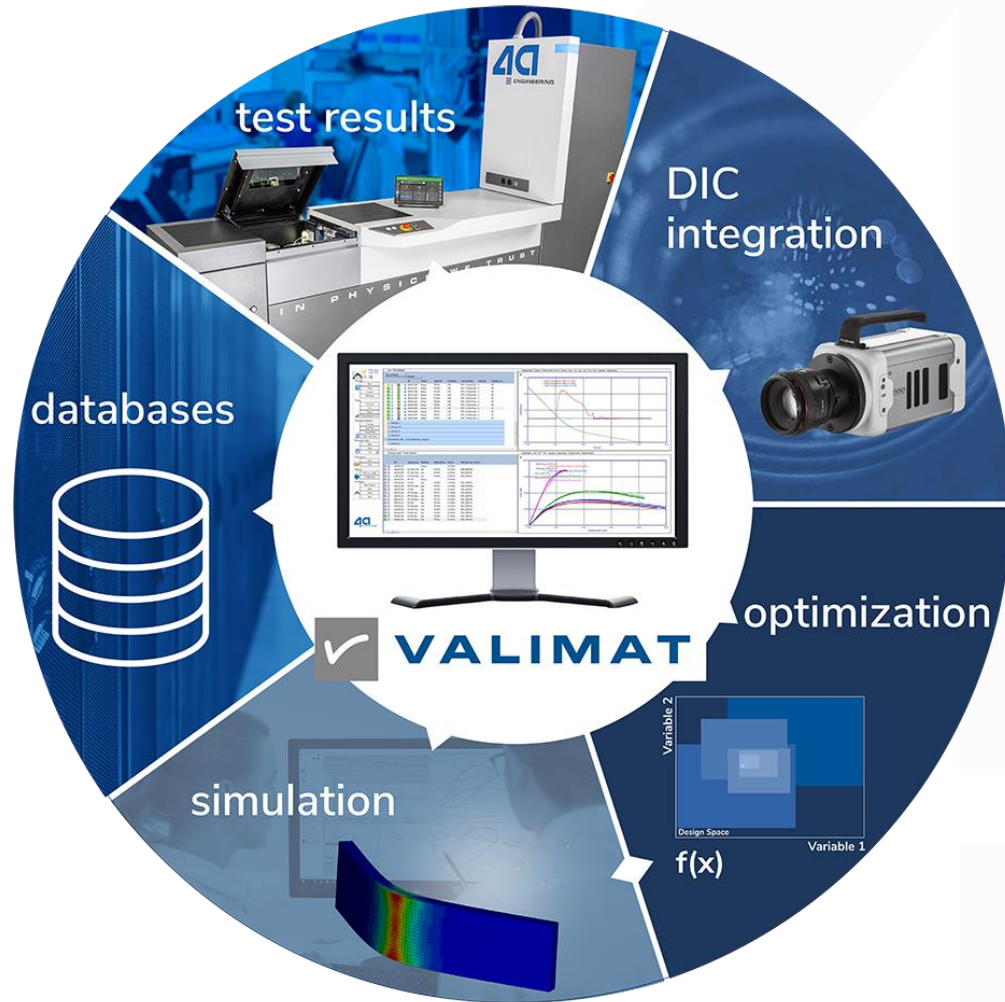
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complete environment

- full integration into VALIMAT environment
- all required test methods for even the most complex material models - on a single machine
- remote control and automated test data upload possible
- further automation already in progress

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01

customer orientation
Think like our customer!

02

motivated & professional
Be a team of pioneers!

03

leadership in technologies
Do what only we can do!

04

high quality outcome & success
Do what bring success!

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