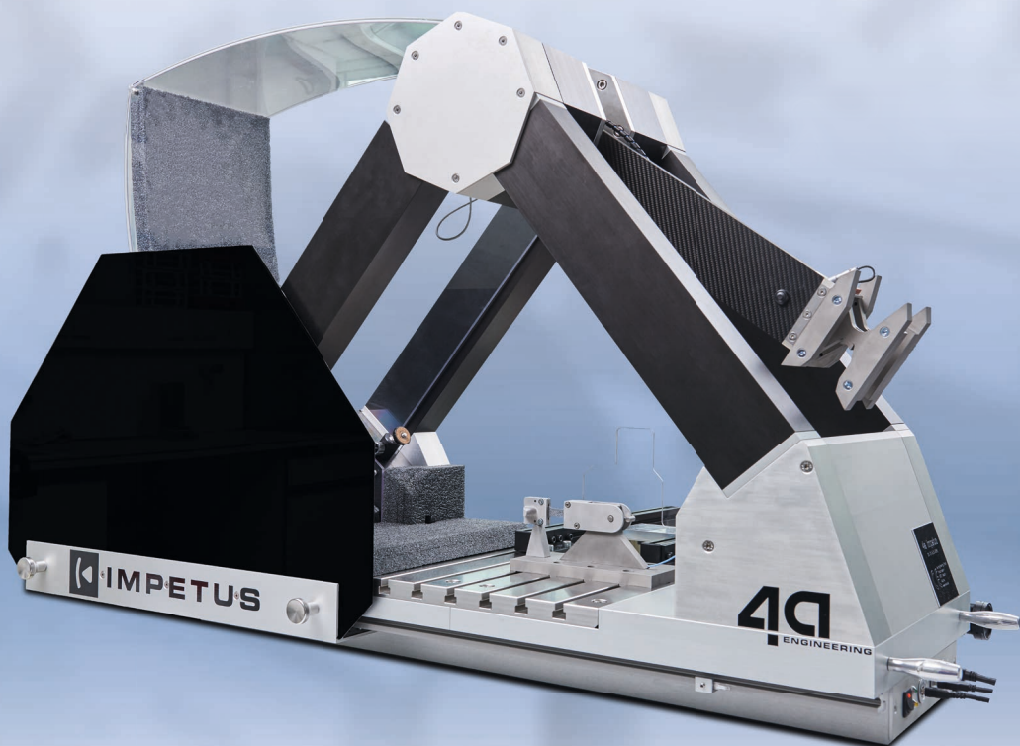




IMPETUS

efficient dynamic testing



I N P H Y S I C S W E T R U S T

IMPETUS® - efficient economic stand-alone solution

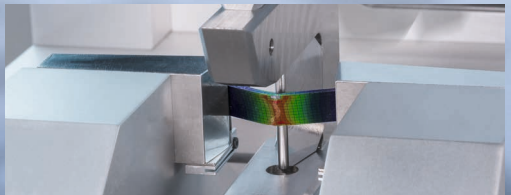
Our testing system IMPETUS® enables the mechanical characterization of dynamically loaded test specimens or components at high strain rates. One essential benefit is the efficiency in determining material data compared to the state of art.

We enable our customers to test a variety of materials (plastics, composites, foams, Aluminum ...) with methods such as bending, dynamic tensile or puncture tests on a single machine, whilst giving the freedom to customize any testing setup.

Validating the material data is also being made confidently easy with our VALIMAT® software, where a single click leads to your desired material card.

Key features of our IMPETUS® testing system

- No additional drive technology required – purely mechanical operation
- Compact design – fits on a standard lab bench
- Integrated safety concept – suitable for lab environments
- Automated data evaluation – in combination with VALIMAT® software
- Realistic loading conditions – e.g., bending tests on actual component sections
- Dynamic high and lower temperature tests from -40 °C up to +120 °C can be performed in combination with a temperature magazine
- Full DIC integration with automated evaluation



3-point-bending test



Dynamic tension bending test



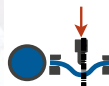
Dynamic tensile test



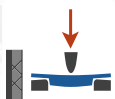
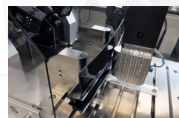
Compression test



Puncture test



Component test





plastics



composites



adhesives



light metals



IMPETUS

efficient dynamic testing



key specs

max energy	50 J
impact velocity	0.5 - 4.4 m/s
mass of swing arm	1.5 - 5.5 kg
length of swing arm	500 mm
max sample rate	2 MS/s

dimensions

weight	165 kg
x / y / z	140 cm / 60 cm / 85 cm
power	110-230 V AC, 50/60 Hz

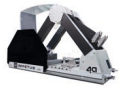


VALIMAT

1

test data
management

- full VALIMAT® integration
- all data in one place



test results



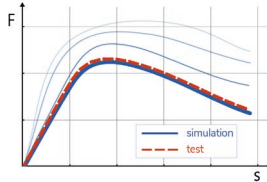
DIC data



2

optimization

- automated FE-model generation
- automated parameter identification
- customizable work-flows



3

validation

- ... of deformation and failure behavior
 - load cases
 - mesh sizes
- one click material card generation



from test to validated material card in one software

Our stand-alone software VALIMAT® combines test- and model data into an efficient database format for material characterization. All testing devices are supported and data can be used to optimize a huge variety of complex material models in LS-Dyna, Pam-Crash, Abaqus with our fully automated AutoFit process. The material model can then be validated on simple FEM coupon tests or even custom built-up geometries and load-cases.

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