# Fraunhofer Institute for Solar Energy Systems ISE

## About this organisation

### Machine translation

This organisation has been machine-translated based on data provided in German.

The Fraunhofer Institute for Solar Energy Systems ISE creates the technical prerequisites for an efficient and environmentally friendly energy supply. With its research focus on energy generation, energy efficiency, energy distribution and energy storage, it contributes to the broad application of new technologies for the transformation of our energy system towards sustainable and renewable sources.

Expertise in lightweight construction for photovoltaic modules and battery cells/systems as well as other technologies of the future energy system such as fuel cells.

Heidenhofstr. 2
79110 Freiburg
Baden-Württemberg
Germany
www.ise.fraunhofer.de

**Organisation type**
Non-university research institution

**Sectors**
Others:

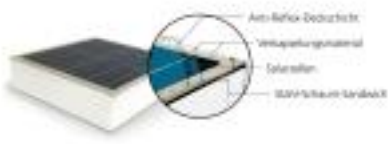
**Employees**
500 and more

**Turnover**
More than €50m

**Funding**
n/a







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## About this organisation

| | |
|---|---|
| **Main areas covered** | Photovoltaics, Energy-efficient buildings, Hydrogen technologies, batteries, Solar thermal energy and industrial processes, Power electronics and grids |
| **Infrastructure** | Material characterisation, Service life analysis, Energy storage technologies, Photovoltaics: Material to module |
| **Certifications** | ISO 9001, ISO/IEC 17025 |
| **Keywords** | Photovoltaics, Hydrogen, Batteries, Power electronics, Thermal components |
| **Memberships** | acatech, Dechema, FVEE, International Energy Agency IEA, VDMA |

## Overview of lightweighting expertise

### Machine translation

This organisation has been machine-translated based on data provided in German.

| | Research | Development | Manufacturing & Supply |
|---|---|---|---|
| **Offer** | | | |
| *Products* | | | |
| *Services & consulting* | | | |

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## Overview of lightweighting expertise

### Machine translation

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| | Research | Development | Manufacturing & Supply |
|---|---|---|---|
| **Field of technology** | | | |
| *Design & layout* | | | |
| **Functional integration**<br>Media conductivity, Thermal activation, Material functionalisation | ✓ | ✓ | |
| **Measuring and testing technology**<br>Component and part analysis, Visual analysis (e.g. microscopy, metallography), System analysis, Environmental simulation, Materials analysis, Destructive analysis, Non-destructive analysis | ✓ | ✓ | |
| **Modelling and simulation**<br>Life-cycle analysis, Multiphysics simulation, Optimisation, Processes, Materials, Reliability validation | ✓ | ✓ | |
| **Plant construction & automation**<br>Plant construction, Automation technology | ✓ | ✓ | |
| **Recycling technologies**<br>Downcycling, Material separation, Recycling, Upcycling | ✓ | ✓ | |

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## Overview of lightweighting expertise

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| | Research | Development | Manufacturing & Supply |
|---|---|---|---|
| **Manufacturing process** | | | |
| **Additive manufacturing**<br>3D printing | ✓ | ✓ | |
| **Coating (surface engineering)**<br>Galvanising, Plasma process, Sputtering, Others (ALD) | ✓ | ✓ | |
| *Fibre composite technology* | | | |
| *Forming* | | | |
| *Joining* | | | |
| **Material property alteration**<br>Mechanical treatment, Thermochemical treatment, Thermomechanical treatment, Heat treatment | ✓ | ✓ | |
| *Primary forming* | | | |
| *Processing and separating* | | | |
| *Textile technology* | | | |

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## Overview of lightweighting expertise

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| | Research | Development | Manufacturing & Supply |
|---|---|---|---|
| **Material** | | | |
| *Biogenic materials* | | | |
| *Cellular materials (foam materials)* | | | |
| *Composites* | | | |
| *Fibres* | | | |
| *Functional materials* | | | |
| *Metals* | | | |
| *Plastics* | | | |
| *Structural ceramics* | | | |
| *(Technical) textiles* | | | |

## Contacts

### Machine translation

This organisation has been machine-translated based on data provided in German.

Mr Dr.-Ing. Georg Krugel

*Scientific advisor to the institute management*

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