



ENERGY

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In the "Energy" business division, Fraunhofer IKTS offers innovative components, modules, and complete energy systems that are engineered, built and tested on a ceramic materials and technologies platform. The applications range from energy storage and fuel cell systems to solar cells, energy harvesting modules and thermal energy systems to solutions for bioenergetic and chemical energy sources.

Completing the transition to sustainable energy resources is one of the vital imperatives of the 21st century. To accomplish this, renewable and conventional energies must be used in a manner that is not only commercially viable, but also achieves the utmost efficiency while having minimal negative impact. When converting and storing electrical and thermal energy, the most salient issues are the robustness and the durability of the systems, as well as the costs of production and operation.

As a full-range service provider, Fraunhofer IKTS tackles these issues holistically because that is the only way to achieve truly innovative solution approaches. This fosters considerable competitive advantages specifically within the dynamic market segment of power generation and storage. In this regard, meticulous analysis always gets top priority, along with the modeling and simulation of ceramic components and systems where applicable, so that the use of specific properties can be optimized, as well as their integration into energy converters and systems. Working in close collaboration with partners in industry, Fraunhofer IKTS operates multiple pilot plants in which it maps entire process chains for the cutting-edge production of energy systems components. This offers the institute a unique opportunity to partner with customers to test and optimize the materials and processes it develops in-house within a quasi-industrial environment.