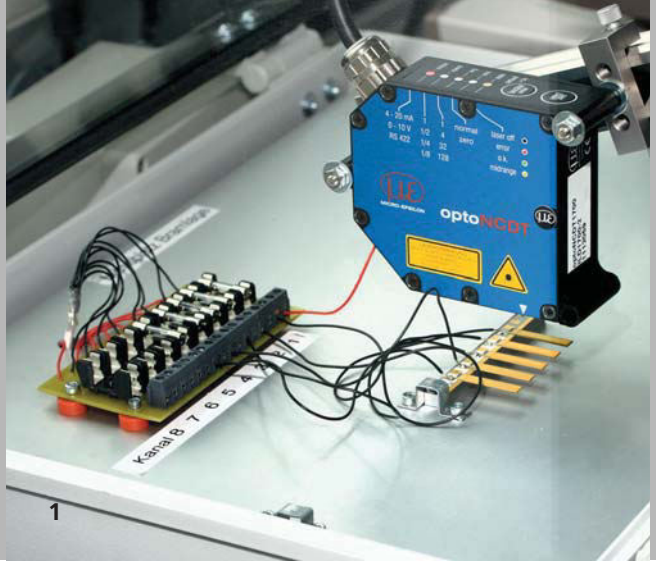

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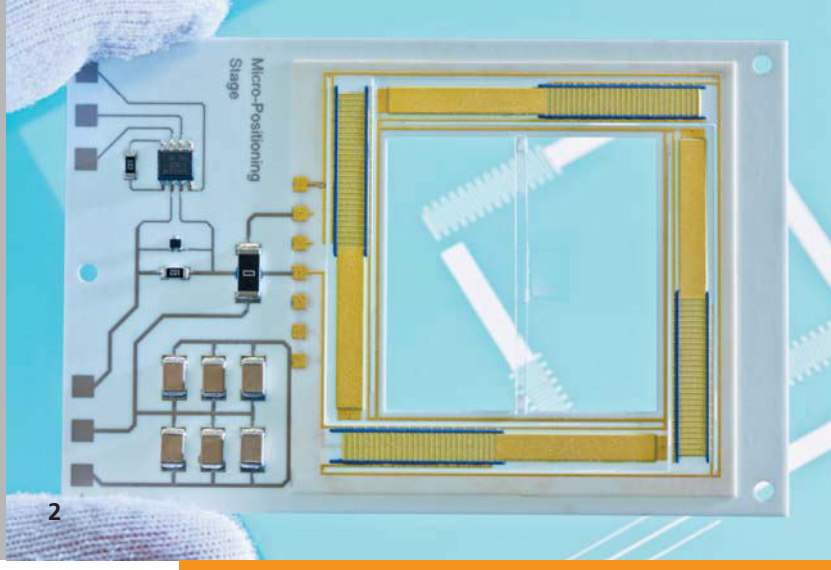

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SMART TRANSFER – TECHNOLOGY PLATFORM FOR THE DEVELOPMENT OF SMART PRODUCTS

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The here introduced technology platform "Smart Transfer" is part of the initial concept "smart³ I materials-solutions-growth" [1] supporting the development of marketable products of high functionality combined with structural simplicity and is based on the BMBF framework program "Twenty20 – Partnership for Innovation" [2]. The proposition of networking and cooperation addresses primarily SMEs, which are interested in increasing their economic success by overcoming limitations due to lack of integration technologies, path-limited innovation processes and unexplored market shares. Therefore, these SMEs search for means to extend their added value chain. Advanced technologies allowing for the development of smart products are part of the smart³ network and are open for use to the contract partners. For this purpose, appropriate organizational and operational regulations are developed and tested in practice. The general aim is an open technology platform in technical and organizational terms, which also protects the specific know-how of the users.

The main focus of the technology offer incorporates services concerning design and technology development for the integration of piezoceramic components in microsystems. Particular emphasis is placed on additive manufacturing, two-component injection molding and ceramic thick-film technology. Materials, component and end product manufacturers of different markets can benefit from the technology platform. A first leading application is represented by electromechanical generators extracting energy from mechanical vibrations of the surrounding to drive low-power electronics. Key technical questions concern the manufacturability of the generator module using the available processes of microsystems technology, the possibility of electronic integration into the package and the proof of evidence to power a certain electrical load. A further important issue concerns economical production. The attainable prices on the market are estimated to guide the development of the production technology. Further exemplary applications will be deduced through dialog with contract partners.

Technology partners developing the platform „Smart Transfer" comprise Fraunhofer IKTS, IWU and IAP, and XENON Automatisierungstechnik GmbH, supported by experts in the fields of application of shape memory alloys and synthetic materials. Appropriate organizational and cooperational structures of the technology platform are analyzed by the Chair for Inter-firm Cooperation at Freie Universität Berlin and will be implemented by the partners of the platform. Triple Helix DIALOG develops the principles of internal and external communication. The perception of end consumer as part of the research and development processes is ensured by incorporating skills in design and art. The technology partners are able to demonstrate the existing technology know-how practically and exemplary, and are willing to transfer it to applicants within the framework of funded or directly assigned research and development projects. An internet-based tool will be used to efficiently and systematically organize appropriate partnerships between service providers of the smart³ technology platform and service recipients.

Services offered

- Demonstration of marketable value chains by utilizing the technology platform (shared production) as part of product development processes
- Evaluation of value chains for new products by shaping trial production processes
- Support of marketability tests of innovative products

Sources

[1] www.smarthoch3.de
[2] www.unternehmen-region.de/de/6829.php

1 *Field test of bender actuator.*
2 *Micropositioning system for optical lenses.*

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