Fastening thread for carbon fibre reinforced plastic (CFRP) components

Innovative thread enables joining of CFRP components

Status quo
In numerous applications rod-shaped or tubular components have to be joined. This statement also applies to components made of carbon fibre reinforced plastic (CFRP). For this material standard threads are suitable only to a limited extent.

Our technology: Special thread for CFRP-components
Due to a novel thread design the cross-sectional area at the root of the thread which bears the shear load, is increased and space requirements are minimized.

Benefits
- Detachable joint of CFRP-components
- Thread achieves increased strength compared to prior designs.
- Small space requirement of the thread
- Economic production process

Current stage of development
Technology-Readiness-Level (TRL): Level 3
Proof of Concept delivered.

Application possibilities
Fields of application are in mechanical engineering, particularly in lightweight design and drive systems (automotive industry, machine tools, pumps). A typical case of application is the fastening of bearings on CFRP shafts with CFRP lock nuts.

Intellectual property situation
The presented technology is protected by a pending patent of TU Darmstadt.

Commercialization opportunities
We are looking for industry partners who are interested in using the technology. If there is any need for further development, a close cooperation between the industry partner and TU Darmstadt is possible.

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