

Process for the production of a porous ceramic body

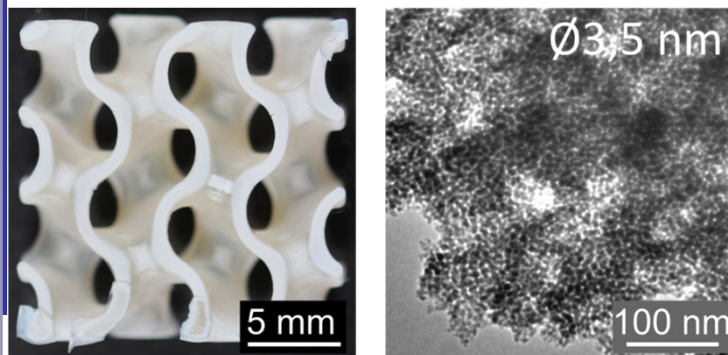
Digital light processing nanoporöser Keramiken

STATUS QUO

Porous and nanoscale porous ceramics, such as silica, are used in membranes, chromatography columns and other applications. In established manufacturing processes, the porous structure cannot be adjusted independently across all length scales. This is a disadvantage for the optimization of material performance, e.g. with regard to separation and transport. In addition, the introduction of functional groups or polymers is only possible.

UNSERE TECHNOLOGIE

We have developed a process that allows pore structure on the nanometer scale and object shape on the micrometer and macroscopic length scale to be controlled independently of each other and also to introduce in-situ functional groups or polymers into the material. This is made possible by the combination of various light-induced reactions, light-based sol-gel chemistry and light-controlled assembly processes. The production is carried out in a 3D printing process using digital light processing. Translated with DeepL.com (free version)



VORTEILE

- Control of porous structure and object dimensions along all length scales
- Printing different object shapes and structures with light

ANWENDUNGSMÖGLICHKEITEN

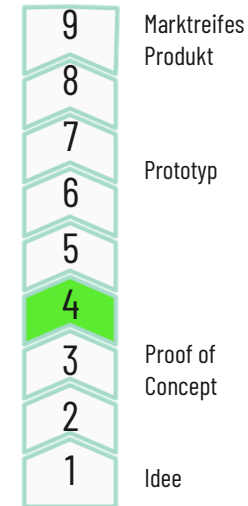
Applications can be found wherever nanoscale porous ceramic materials are used.

- Separation
- chromatography

UNSER ANGEBOT FÜR SIE

The collaboration can range from an exchange with the technology's know-how carriers to close cooperation in the event of further development requirements. The technology protected by intellectual property rights can be used by selling or licensing it to the company.

TECHNOLOGY READINESS LEVEL (TRL)



The development is at level 4*:

We have printed and characterized the first model structures and are working on further structures, their characterization and the control of the nanoscale pore structure.

ANSPRECHPARTNER



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