数据资源：林业专题资讯

打印 下载 A+ A- 分享

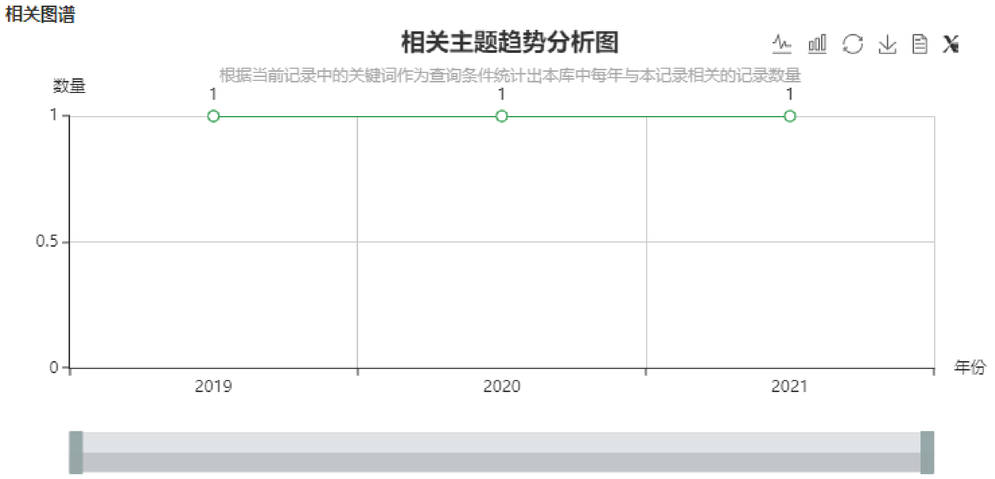
Smart polymers and nanocomposites for 3D and 4D printing

编号	020025104
推送时间	20200810
研究领域	林产化工
年份	2020
类型	期刊
语种	英语
标题	Smart polymers and nanocomposites for 3D and 4D printing
来源期刊	Materials Today
期	第251期
发表时间	20200704
关键词	Two-dimensional; Metallic nanocrystals; Renewable energy; Electrocatalysis;
摘要	Smart materials, also known as intelligent materials, which are responsive to the external stimuli including heat, moisture, stress, pH, and magnetic fields, have found extensive applications in sensors, actuators, soft robots, medical devices and artificial muscles. Using three-dimensional (3D) printing techniques for fabrication of smart devices allows for complex designs and well-controlled manufacturing processes. 4D printing is attributed to the 3D printing of smart materials that can be significantly transformed over time. Herein the smart materials including hydrogels and polymeric nanocomposites used in 4D printing were reviewed and the fundamental mechanisms responsible for the functionalities were discussed in detail. In this report, 4D printing of smart systems and their applications in sensors, actuators and biomedical devices were reviewed to provide a deeper understanding of the current development and the future outlook.
服务人员	尚玮姣
PDF文件	浏览全文

相关记录 更多 >

- Drivers and barriers in retrofitting pulp and paper industry with bioenergy for mo... 2021-06-28
- Nanocellulose-graphene composites: A promising nanomaterial for flexible super... 2019-11-04

相关图谱



相关主题

二维相关 二维条码 可再生能源

相关论文

- 可持续农庄规划途径探析(英文)