

Leibniz Lecture:
Roadmap for Ceramics 2025

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Materials Science frequently is named as one of the 5 key scientific fields for our future. Materials are subdivided into metals, ceramics, polymers, composites and semiconductors. While metals, polymers, composites and semiconductors seem ubiquitous, ceramics are often only encountered with some awareness in the form of porcelain and washbasins.

A strong drive towards research into ceramics, away from the traditional field of metals, started in the mid-80s with the quest for ceramic engines and – little later – ceramic superconductors. In the last 10 years, however, functional ceramics (or electroceramics) have impacted lives of many people to a noticeable degree.

This talk will describe today's ceramics with a focus on functional ceramics. Market shares, growth rates and examples for functional ceramics will be discussed as well as simple scientific principles. After this overview, the German effort of constructing a roadmap will be presented, including techniques to construct a roadmap, history of roadmapping etc. Both the short term extrapolation as well as the long-term deduction from megatrends will be discussed.