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Progress in Ceramic Materials

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Editorial

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INTRODUCTION

Ceramic materials are essential for their durability, thermal resistance, and chemical stability. They are widely used in electronics, energy, and biomedical sectors. This article highlights five research domains: advanced structural ceramics, ceramic composites, electronic ceramics, bio-ceramics, and porous ceramics.

Key Research Areas in Ceramic Materials

Structural Ceramics: Alumina and zirconia are used in cutting tools, aerospace parts, and protective coatings [1].

Ceramic Composites: Ceramic-matrix composites enhance toughness and fracture resistance, crucial for turbine engines [2].

Electronic Ceramics: Piezoelectric and ferroelectric ceramics are used in sensors, capacitors, and memory devices [3].

Bioceramics: Hydroxyapatite-based ceramics are employed in dental implants and bone grafts [4].

Porous Ceramics: Porous ceramics enable filtration, catalysis, and biomedical scaffolds [5].

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