

# Keywords

## A. Types of Material

Alumina  
Amorphous materials  
Apatite  
BaTiO<sub>3</sub>  
Borides  
CeO<sub>2</sub>  
Carbides  
Chalcogenides  
Clays  
Composites  
Ferrites  
Fibres  
Films  
Fluorides  
Fullerenes  
Glasses  
Glass ceramics  
Graphene  
Halides  
Hydroxyapatite  
Hydrides  
Intermetallic compounds  
Lead zirconate titanates  
MgO  
Mullite  
Nanocomposites  
Nanopowders  
Nanostructures  
Nanotubes  
Nanowires  
Niobates  
Nitrides  
Oxide superconductors  
Perovskites  
Platelets  
Polymers  
Porcelain  
Porous materials  
Powders  
Quantum dot  
SiC  
Si<sub>3</sub>N<sub>4</sub>  
Silica  
Sialon  
Silicate  
Spinels  
Suspensions  
Titania  
Tantalates  
Titanates  
Traditional ceramics  
Whiskers  
Yttria  
YAG  
ZnO  
Zirconia

## B. Synthesis and Processing

Aging  
Calcination  
Chemical solution deposition  
Combustion synthesis  
Crystal growth  
Crystallization  
Doping  
Drying  
Electrophoretic deposition  
Extrusion  
Firing  
Gas phase synthesis  
Grain growth  
Hot pressing  
Injection moulding  
Ion implantation  
Laser processing  
Mechanochemical synthesis  
Melt quenching  
Microwave processing  
Milling  
Nanofabrication  
Pressing  
Screen printing  
Shaping  
Sintering  
Slip casting  
Sol-gel processes  
Solid state synthesis  
Spark plasma sintering  
Tape casting  
Template  
Vapour deposition  
Wet-chemical synthesis

## C. Properties

Acoustical properties  
Bioactivity  
Biocompatibility  
Catalytic properties  
Chemical properties  
Colour  
Corrosion  
Creep  
Dielectric properties  
Diffusion  
Electrical conductivity  
Electrical properties  
Energy storage  
Fatigue  
Ferroelectric properties  
Fracture  
Friction  
Hardness

Ionic conductivity  
Magnetic properties  
Mechanical properties  
Optical properties  
Piezoelectric properties  
Plasticity  
Quantum Hall effect  
Strength  
Superconductivity  
Surface properties  
Thermal conductivity  
Thermal expansion  
Thermal properties  
Thermal shock resistance  
Toughness and toughening  
Tunnelling  
Wear resistance

#### **D. Characterization**

Atomic force microscopy (AFM)  
Adhesion  
Calorimetry  
Computer simulations  
Crystal structure  
Defects  
Differential scanning calorimetry (DSC)  
Domain structure  
Electrochemical measurements  
Electron diffraction  
Electron energy loss spectroscopy (EELS)  
Electronic paramagnetic resonance (EPR)  
EXAFS, XANES  
Failure analysis  
Grain boundaries  
Grain size  
High pressure  
Impedance spectroscopy  
Impurities  
Inclusions  
Infrared spectroscopy (IR, FTIR)  
Interfaces  
Light scattering  
Kinetics  
Magnetic measurements  
Microstructure  
Modelling  
Molecular dynamics simulations  
Mössbauer spectroscopy  
Neutron scattering  
Non-destructive evaluation  
Nuclear magnetic resonance (NMR)  
Phase diagrams

Optical microscopy  
Raman spectroscopy  
Small angle neutron scattering (SANS)  
Small angle X-ray scattering (SAXS)  
Scanning electron microscopy (SEM)  
Scanning tunnelling microscopy (STM)  
Spectroscopy  
Structural characterization  
Surfaces  
Synchrotron radiation  
Thermal analysis  
Transmission electron microscopy (TEM)  
Ultrasonic measurements  
Vacancies  
X-ray diffraction (XRD)

#### **E. Applications**

Actuators  
Batteries  
Bioceramics  
Biomedical applications  
Capacitors  
Cutting tools  
Dental materials  
Electrodes  
Enamel  
Engine components  
Fuel cells  
Hard magnets  
Heat exchangers  
Insulators  
Lasers  
Membranes  
Multiferroics  
Nuclear applications  
Optical devices  
Optoelectronics  
Photocatalysis  
Photovoltaics  
Piezoelectrics  
Pigments  
Refractories  
Relaxors  
Sensors  
Semiconductors  
Soft magnets  
Structural applications  
Thermal applications  
Thermistors  
Varistors  
Wear parts