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**Keyword Listing**

1. **Materials**

   - aluminum nitride (AlN)
   - amorphous
   - amorphous carbon
   - amorphous hydrogenated carbon
   - amorphous alloys
   - boron nitride (BN)
   - carbides
   - carbon nitride
   - composites
   - cubic boron nitride (c-BN)
   - diamond crystal
   - diamond film
   - diamond-like carbon
   - fibres
   - fullerenes
   - gallium nitride (GaN)
   - graphite
   - glassy carbon
   - metastable phases
   - nanocrystalline
   - nanofibers
   - nanoparticles
   - nanostructures
   - nanotubes
   - natural diamond
   - nitrides
   - polytypes
   - silicon carbide (SiC)
   - synthetic diamond
   - tetrahedral amorphous carbon

2. **Growth and Synthesis**

   - bias growth
   - buffer layer
   - cathodic arc discharge
   - chemical vapor deposition
   - chemisorption
   - combustion synthesis
   - simulation
single crystal growth
gas phase reactions
heteroepitaxy
heterojunction
high pressure crystal growth
high pressure high temperature (HTHP)
homoepitaxy
hot filament CVD
ion assisted deposition
ion beam deposition
ion bombardment
molecular beam epitaxy (MBE)
nucleation
physical vapor deposition
plasma CVD
pulsed laser deposition (PLD)
reactor modelling
solution growth
sputtering
sublimation growth
vapour growth

3. Processes and Phenomena

abrasion
absorption
adhesion
adsorption
catalytic processes
corrosion
desorption
diffusion
etching
field emission
friction
impact ionization
implantation
isotopic effects
oxidation
optical emission
passivation
polishing
radiation induced effects
reactive ion etching (RIE)
wear

4. Characterization

defect characterization
electrical properties characterization
grain boundary characterization
high resolutions electron microscopy
impurity characterization
interface characterization
mechanical properties characterization
optical properties characterization
scanning probe techniques
surface characterization
surface microscopy
vibrational properties characterization
5. Properties

acoustic properties
band structure
biocompatibility
bonding configurations
n-type doping
p-type doping
defects
electrical conductivity
electrical properties
electron affinity
electronic states
excitons
grain boundaries
hardness
impurities
interface structure
interface electronic properties
mechanical properties
microstructure
morphology
Ohmic contacts
optoelectronic properties
optical properties
phonons
sound waves
strain
surface energy
surface structure
surface electronic properties
thermal properties
thermal stability
tribology
vibrational properties
work function

6. Applications

actuators
biomaterials
biomedical applications
coatings
cutting tools
device modeling
detectors
display technologies
electrodes
electrochemical
electronic device structures
high power electronics
high frequency electronics
light emission
laser materials
membranes
micro electromechanical systems (MEMS)
nanotechnology
Schottky diodes
sensors
surface acoustic wave devices
superhard materials
windows

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