Aluminum Nitride Solar Generator

In this paper, aluminum nitride (AlN), known for high thermal shock resistance, is introduced as a heat dissipation layer, which reduces the heat accumulation between the perovskite layer and the electron ...

X-ray diffraction and chemical composition analyses of the product indicate virtually complete conversion of aluminum to aluminum nitride for some precursor mixtures.

In this work, we demonstrate that aluminum nitride prepared by sputtering can provide a good level of surface passivation for highly doped n+-type and p+-type silicon.

OverviewApplicationsStructures and physical propertiesStability and chemical propertiesSynthesisSee alsoEpitaxially grown thin film crystalline AlN is used for surface acoustic wave sensors (SAWs) deposited on silicon wafers because of AlN"s piezoelectric properties. Recent advancements in material science have permitted the deposition of piezoelectric AlN films on polymeric substrates, thus enabling the development of flexible SAW devices. One application is an RF filter, widely used in mobile phones, which is called a thin-film bulk acoustic resonator (FBAR). This is a MEMS device that uses aluminium ni...

The devices are made up of a W-AlN-W stack and a top aluminum nitride layer that serves as both a protective layer and an inducer of resonances. These structures have a strong thermal emittance and ...

Indium aluminum nitride (In x Al 1-x N) has been identified as a semiconductor with high potential for applications in photovoltaic technology, standing out for its tunable bandgap and its ability to withstand ...

Currently there is much research into developing light-emitting diodes to operate in the ultraviolet using gallium nitride based semiconductors and, using the alloy aluminium gallium nitride, wavelengths as short as 250 ...

Herein, by modulating the Al element content through a co-sputtering system, a high-entropy nitride MoTaTiCr-Al-N based SSA with a simple double-layer structure is successfully fabricated.

Herein, we suggest a novel 2D/2D vdW heterobilayer consisting of silicon carbide (SiC) and aluminum nitride (AlN) as an exciting photocatalyst for solar-to-hydrogen conversion ...

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