

Abstract

Semiconductor wafer with a layer of $\text{Al}_z\text{Ga}_{1-z}\text{N}$ and process for producing it

5

The invention concerns a semiconductor wafer comprising the following layers in the given order:

- a monocrystalline substrate wafer (1) consisting essentially of silicon and having a (111) surface orientation,
- 10 - a monocrystalline layer (3) of Sc_2O_3 having a (111) surface orientation,
- a monocrystalline layer (4) of ScN having a (111) surface orientation, and
- a monocrystalline layer (6) of $\text{Al}_z\text{Ga}_{1-z}\text{N}$ with $0 \leq z \leq 1$ having
- 15 a (0001) surface orientation.

The invention also concerns a process for producing this semiconductor wafer.

20 Figure to be published with the abstract: Fig. 1