

ON THE SYSTEM OF SURFACE ELECTRON
STATES OF REAL AND SULFIDIZED
SURFACES OF GaAs

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S u m m a r y

The electronic properties of real and sulfidized (100) surfaces of n -GaAs are investigated by the technique of determining the temperature and electric field dependences of surface photovoltage. It is found that the system of surface electron states (SES) transforms on cooling of the real surface from 300 to 100 K. The SES system becomes stable after the sulfur passivation of the GaAs surface. The SES effective density distribution in the GaAs gap for real and sulfidized surfaces obtained from the electric field dependences of the surface photovoltage depends on temperature. This is related to the manifestation, in electric field measurements, of electron states to be on both the interface of GaAs - surface film, in the film, and on its surface. The sulfur passivation reduces the electron state density of both types and concentration of deep traps for nonequilibrium holes.