

SINGULAR SURFACE POLARITONS
IN OPTICALLY ANISOTROPIC Al_2O_3 CRYSTALS

*E.F. Venger, N.L. Dmitruk,
L.Yu. Melnichuk¹, O.V. Melnichuk¹*

Institute of Semiconductor Physics,
Nat. Acad. Sci. of Ukraine
(45, Nauky Prosp., Kyiv 03028, Ukraine),

¹Gogol Nizhyn State Pedagogical University
(2, Kropyvnyansky Str., Nizhyn 16600, Ukraine)

S u m m a r y

Using the multioscillator model, we consider the conditions of excitation and propagation of surface waves of a new type in limited uniaxial Al_2O_3 single crystals, namely, singular surface polaritons (SSP). The frequency windows where SSP can exist, are revealed. For the first time, the dependences of the two-dimensional wave vector $k(\nu)$ and angle between it and the X-axis, $\gamma(\nu)$, are investigated by considering the decay coefficients of Al_2O_3 oscillators.