Contribution ID: 771

Type: Oral

START DETECTOR FOR TIME-RESOLVED HIGH ENERGY IONOLUMINESCENCE EXPERIMENTS

Friday, 13 November 2020 14:30 (15 minutes)

Being a sensitive probe for structural imperfections, the ion beam induced luminescence is efficient tool for real-time characterization of irradiating materials. In particular, registration of the luminescence decay after single ion impact may provide very interesting information about dynamics of dense electronic excitations in vicinity of swift ion trajectory. Temporal resolution in such experiments is strongly dependent on parameters of start pulse of usually MCP based detector placed on some distance from studied specimen, which registers secondary electrons emitted from the thin metal foil by ion passage. To avoid any effects due to dispersion in the ion energy after passage of foil, we suggested using electron emission immediately from the target surface. The design of start pulse detector and first results of measurements of luminescence decay curves from 1.2 MeV/amu Xe ion irradiating aluminum oxide with 400 ps resolution are presented.

Primary author: ISSATOV, Askar (JINR)

Co-authors: SKURATOV, Vladimir; TETEREV, Yuri (JINR FLNR); MITROFANOV, Semen (FLNR); MORZ-ABAEV, Aidar (L.N. GUMILYOV EURASIAN NATIONAL UNIVERSITY)

Presenter: ISSATOV, Askar (JINR)

Session Classification: Condensed Matter Physics

Track Classification: Condensed Matter Physics