Contribution ID: **522** Type: **Poster Presentation**

Radiation damage of sapphire induced by ion implantation studied in nuclear and electronic energy loss regime.

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Abstract content
   (Max 300 words)

Single crystals of a-Al2O3 were irradiated with silver and gold ions at room temperature with the range of fluences from 6x1016 to 3x1017 ions/cm2. The samples were characterized by Rutherford Backscattering Spectrometry in Channelling geometry (RBS-C) and high resolution transmission electron microscopy (HRTEM). Electronic energy loss is responsible for creation of damage in high energy (15 -20 MeV) gold implanted crystals.
In the 150 keV silver implanted specimens the disorder is produced by nuclear energy stopping of the ions. RBS-C analysis and HRTEM images provide surprising result of
retained crystalline structure from the surface up to the buried silver layer. The entirely different picture is observed for energetic Au ions damaged sapphire.
RBS-C analysis shows the presence of highly disordered structure of random level for both as implanted and annealed material.

Apply to be
 consider for a student
   award (Yes / No)?

no

Level for award
 (Hons, MSc,
   PhD)?

no

Main supervisor (name and email)
and his / her institution

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Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?

no

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