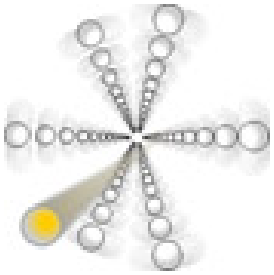

Contribution ID: **4** Type: **not specified**

Transmission Axial and Planar Channeling of Protons from Ultra Thin(55nm) Si.

Tuesday, 25 September 2012 11:10 (25 minutes)

The report contained information about my project includes the fabrication of thin silicon [001] membranes (55nm) and the experimental observation of Rainbow Channeling fine angular distributions through these membranes using a nuclear microprobe facility. The observation of these fine angular structures in the channeling patterns will be the first experimental proof of the simulations done by various groups in the past 25 years. This is possible because of the reduced multiple scattering in the thinner silicon crystals.

Simulations predicted the existence of a super focusing effect of ion beam by each unit cell of a thin crystal membrane. The predicted super focused spot size is about ~20 pm and can be used as a Sub atomic- Nuclear Microscope. However, this was never experimentally proven as thin enough crystals were not available.

These experimental results confirm the many Rainbow Channeling simulations previously done and provide further evidences to the existence of the Super focusing effect.

Primary author: Mr MOTAPOTHULA, MALLIKARJUNA RAO (GRADUATE STUDENT)

Co-authors: Prof. MARK, Breese (PROFESSOR); Dr MUKHTAR, Rana (Principal Scientist); Prof. TIRUMALAI, Venkatesan (PROFESSOR); Ms DANG, Zhiya (GRADUATE STUDENT)

Presenter: Mr MOTAPOTHULA, MALLIKARJUNA RAO (GRADUATE STUDENT)

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