



Contribution ID: 112

Type: **Poster presentation**

## **Low Charge State Laser Ion Source Driven by a Sub Nanosecond Laser**

*Monday 16 October 2017 18:45 (15 minutes)*

We are studying possibility to use sub nanosecond lasers to deliver low charge state ion beams from various target materials. Since 2014, a laser ion source (LIS) is in operation to provide singly charged heavy ion beams to user facilities at Brookhaven National Laboratory. For the LIS, 1064 nm, 6 ns single resonator ND-YAG lasers are used. It is required to operate the LIS for more than half a year without major maintenance. Also, some materials are expensive or harmful and less consumption of the target materials would be highly beneficial. In fact, most of the material consumption is due to vaporization after emitting hot ablation plasma and the vaporization is driven by heat conductivity in sub nanosecond time scale. By using a sub nanosecond laser system, we may be able to reduce the effect of heat conductivity on the target surface. This may reduce consumption of target material and improve the performance of the LIS. Using a sub nanosecond laser, the irradiation condition is being experimentally studied. In the conference, we will report the features of the new laser ion source for low charge state production using a sub nanosecond laser.

**Primary authors:** OKAMURA, Masahiro (Brookhaven National Laboratory); Dr IKEDA, Shunsuke (Brookhaven National Laboratory); Dr KANESUE, Takeshi (Brookhaven National Laboratory); Mr KARINO, Takahiro (Ut-sunomiya University); KONDRASHEV, Sergey (Brookhaven National Laboratory)

**Presenter:** OKAMURA, Masahiro (Brookhaven National Laboratory)

**Session Classification:** Poster Session 1

**Track Classification:** Production of high intensity ion beams