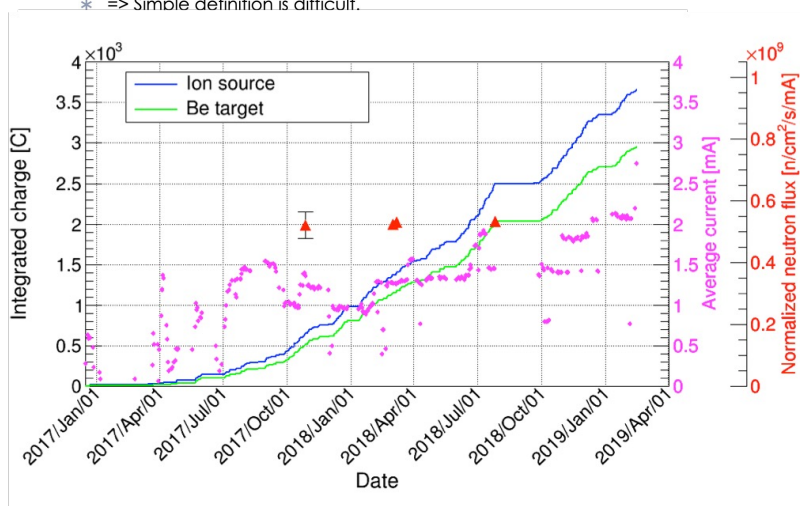


Poster #27 id 122

###START 2023/11/05 0:01:07
 Beam status = BEAM OFF
 Target CCG PRS.(Pa) = 1.00e-007
 Target CCG03 PRS.(Pa) = 3.00e-007
 IS Beam Charge (C) = 9191.40890
 TargetII Beam Charge (C) = 4507.40996
 RFQ CCG3 PRS (Pa) = 3.30e-006
 2023/11/05 0:01:08

Definition of lifetimes of your neutron sources

- * Neutron sources, basic research, industrial, medical,...
- * Intensity, $\sim 10^5 \sim 10^{13}$ < HICANS < J-PARC, SNS, ESS,
- * Target system, Solid, Liquid,
- * Proton energy, High current Low energy, Low current High energy
- * Beam characteristics
- * Lifetime of neutron sources – Phenomena
- * BEHAVIOR of proton, Hydrogen
- * => Simple definition is difficult.



HPTW2023, RIKEN Wako, Nov 6-10, 2023

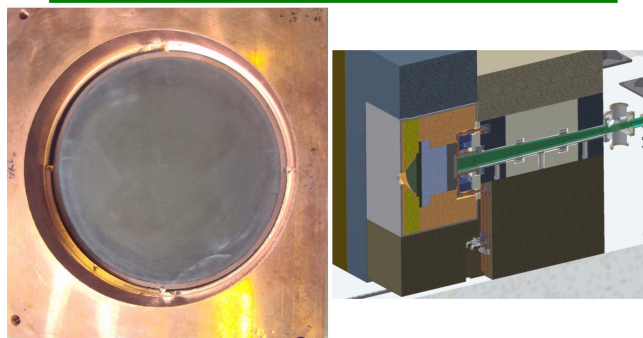
To realize accelerator driven 80kW class neutron source – defect control and thermal management.

KURIHARA, Toshikazu High Energy Accelerator Research Organization (KEK)

Stable neutron sources

- * National Cancer Center Japan/ CICS => Low Temperature and Pressure Synthesis of Lithium Nitride Compound with H₂O Addition on Lithium Target for BNCT (S.Ishiyama et al. J. Japan Inst. Met. Mater. Vol. 78, No. 8 (2014), pp. 317-321)
- * Hiroshima Univ./ NIRS => CrN/Li/Cu by Ion Implantation Method
- * Helsinki University Hospital/ Neutron Therapeutics => Paddle Target
- * Nagoya Univ./ Yagami => Ti/Li, Turbulence (~NIM)
- * iBNCT/ KEK, Tsukuba Univ. => Defect Control (Pat.No 4713653)

Target manufacturing



Three tier target 特開2014-81211

Target and moderator

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HPTW Poster Session & Reception - Board 105 / 85

toshikazu.kurihara@kek.jp

Three tier blistering tolerant neutron target for iBNCT by using 80kW proton linac.

HPT14, Fermilab, 20-23 May 2014

KURIHARA, Toshikazu High Energy Accelerator Research Organization (KEK)
 & iBNCT Target R&D group (MTC, NGK, MHI)

