

# **Radiation Damage Test of the Ferromagnetic Fluid**

**ILC-CLIC e+ studies  
12-Dec-2013  
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# Takasaki Advanced Radiation Research Institute, JAEA



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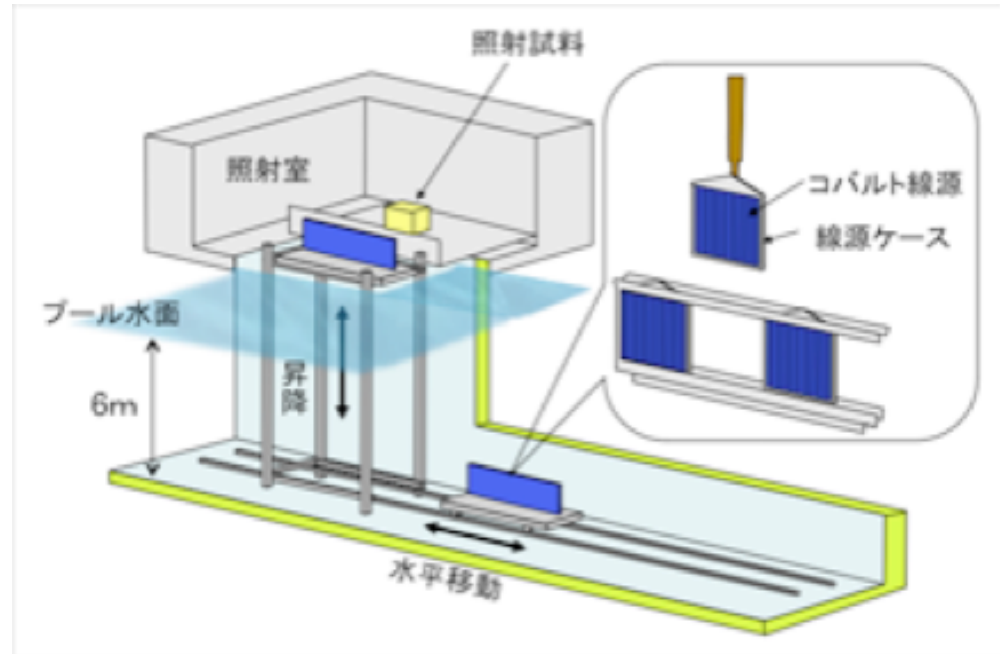
Takasaki, JAEA

Tsukuba, KEK

Tsuchiura, My Home

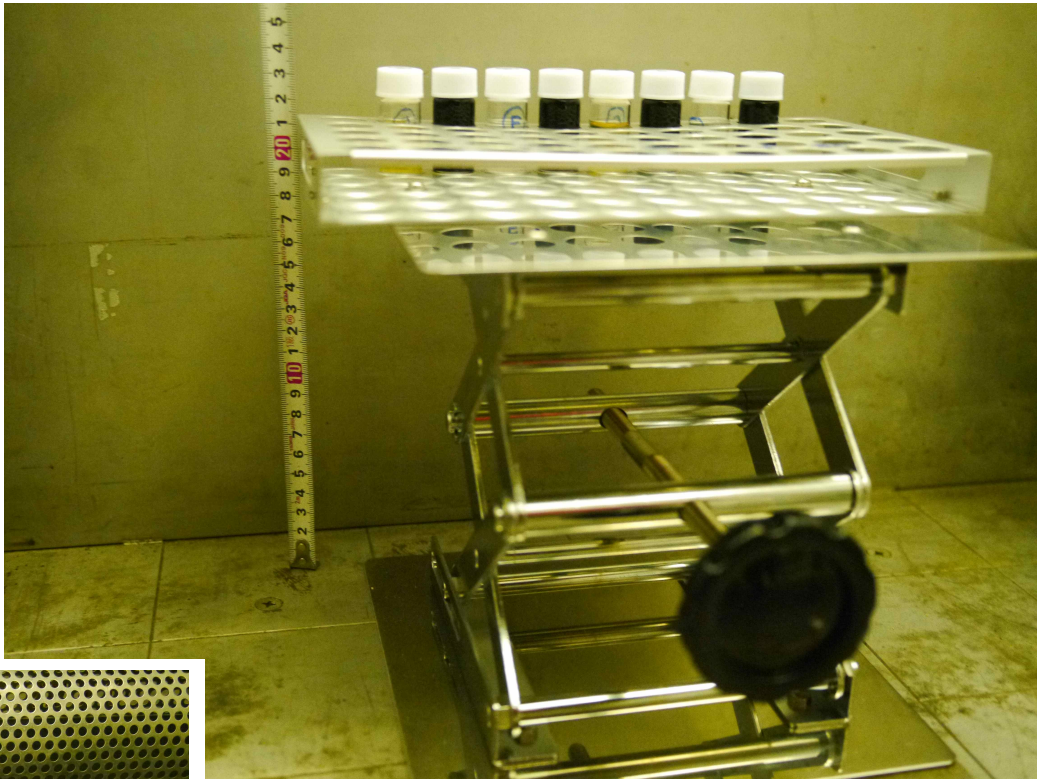
Tokyo

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**Gamma-ray source: Co 60**

**$1.1 \times 10^4$  Gy/h**



# **Radiation Damage Test of the Ferromagnetic Fluid**

## **A set of Samples**

**A : Ferromagnetic Fluid of Oil A**

**A': Oil A**

**B : Ferromagnetic Fluid of Oil B**

**B': Oil B**

# Plan

**December 2013: Warming-up**

We put first 2 sets in the irradiation chamber on December 4th.

**Set #1:  $\sim 2.7 \times 10^5$  Gry (0.2 %)**

**Set #2:  $\sim 3.2 \times 10^6$  Gry (2.5%)**

**End of December 2013:**

**Modification of the Source:**

**$1.1 \times 10^4$  Gry/h  $\rightarrow$   $1.6 \times 10^4$  Gry/h**

**Jan.-Mar. 2014: Pre Test**

**Set #3:  $\sim 3.0 \times 10^7$  Gry (25%)**

**Apr. 2014 – Mar. 2015: Full Test**

**Set #4:  $\sim 1.2 \times 10^8$  Gry (100%:  $\sim 1$  year at ILC\*)**

(\*) 300 Hz conventional  
rotation target  $d=200$  mm  
no shielding