Non-Destructive Analysis Study with Negative Muon Beam toward Spot Scanning imaging at JPARC MUSE

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Elemental analysis using negative muon beam has been non-destructively demonstrated for cultural heritages [1] in JPARC MUSE. Elemental compositions in that heritages have been revealed with few micron resolutions. Recently, this analysis method provides a great interests for many engineers developing an industrial devices, which are electric battery and outer gas filter. It is very important to diagnose elemental movement inside the devices under “switch on” condition for designing higher efficiency and better quality. For such diagnostic, elemental analysis is 3-dimentionally required with few-mm spatial resolutions. For satisfying such requirement, we are now developing an elemental analysis system, including chamber, collimator, and multiple Ge detectors. In this conference, we will discuss about detail of the system developing and report a result of elemental analysis using the system.

References

[1] K. Ninomiya, et., al, J. Phys. Conference Seri. **225**, 012040 (2010).