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A new real-time detection system for heavy element research

Yu. Tsyganov, A.Polyakov, A.Voinov

Flerov Laboratory of Nuclear Reactions, Joint Institute for Nuclear Research, Dubna, 141980, Moscow Region, Russian Federationy
Contact email: *tyura@sungns.jinr.ru.*

New detection system design for heavy element research [1,2] with ^{48}Ca projectile has been reported. This system is based on application of 32 position sensitive strip PIPS detector and low pressure pentane filled TOF detector application in ^{48}Ca induced nuclear reactions. To suppress beam associated background products new version of real-time method of “active correlations” has been applied. Examples of applications in ^{249}Bk+^{48}Ca and ^{243}Am+^{48}Ca reactions are presented. The system development to operate together (in parallel) with the digital ORNL detection system to provide a quick search for EVR-alpha correlation chains has been discussed too. In that case the system operates with DSSSD large area Micron Semiconductors detector.

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[1] Y.Oganessian et al., Phys. Rev. Lett. 109, 162501 (2012);
[2] Y.Oganessian et al., Phys.Rev.C. 87, 014302(2013)