It is believed that there must be a large CP(T)-violating phenomena outside of CKM mechanism, because the amplitude of CP-violation predicted by the CKM is not enough to explain a matter-antimatter asymmetry in our universe. The MTV (Mott Polarimetry for T-Violation) experiment at TRIUMF is motivating to search a new physics beyond the Standard Model via T-violation in nuclear β decay by measuring triple vector correlation coefficient $R$ in β decay rate function [1],

$$W \propto \left( N \sigma_e \cdot \frac{\langle \vec{J} \rangle}{J} + R \sigma_e \cdot \frac{\langle \vec{J} \rangle}{J} \times \frac{\vec{p}_e}{E_e} + \ldots \right)$$

A non-zero value of the $R$-parameter implies existence of the T-violating transverse polarization of electron emitted from polarized nuclei. The transverse polarization is measured as left-right scattering asymmetry in backward Mott-scattering of the electrons by a thin metal foil [2]. Then the incident and backward scattered tracks (V-tracks) are detected with a drift chamber in event by event. The scattering angles of these V-tracks are the measurement of the MTV experiment.

The first test experiment (Run-I) was performed at TRIUMF in 2009 using the planer drift chamber, and the physics production run (Run-II) was performed in 2010. We started the next generation experiment CDC (Cylindrical Drift Chamber) in 2011, which aim is to suppress the systematic error caused by geometrical asymmetry of the planer drift chamber. The performance test of CDC (Run-III) carried out in 2011. In 2012, final test experiment (Run-IV) at 100Kpps polarized $^8$Li beam using CDC was performed installing new FEE, FPGA-based Trigger/DAQ system and triggering detectors. The setup details and results of the experiment are going to be presented in this conference.