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[A11] Silicon strip detector for muon g-2/EDM experiment at J-PARC

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The anomalous magnetic moment of muon, muon g-2, has been precisely measured by the experiments at BNL and FNAL, and there is a 4.2 sigma discrepancy between the measurement and the prediction. A new experiment to measure the muon g-2 is planned at J-PARC, based on a different strategy. A low emittance muon beam is stored in a compact storage magnet, and spin precession of muons is reconstructed from the decay positron orbits.

For this purpose, a silicon detector is being developed to track decay positrons. It consists of 160 modules called quarter-vane, on which four $100\,\mathrm{cm}^2$ silicon strip sensors are mounted. Assembly of the quarter-vanes will start from 2024, and its preparation is ongoing. The 15000 readout ASICs has been produced, and its quality assurance system has been developed. Assembly procedure of quarter-vane is also being studied, including a sensor alignment method with a few um precision. This talk summarizes the status and the outcome of these studies.

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