Permanent EDMs (electric dipole moment) of fundamental particles violate both time invariance $\mathcal{T}$ and parity $\mathcal{P}$. Assuming the $CPT$ theorem this implies $CP$ violation. The Standard Model predicts non-vanishing EDMs, their magnitudes, however, are expected to be unobservably small with current techniques. Hence, the discovery of a non-zero EDM would be a signal for "new physics".

As a first step towards EDM searches of charged particles in storage rings, R&D work at the Cooler Synchrotron COSY is pursued. Subsequently, a first direct EDM measurement of a charged particle will be performed at COSY, and, on a longer time scale, the design and construction of a dedicated storage ring will be carried out.