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**Performance check of cell with newly designed electrode for $^{129}$Xe EDM measurement** YU SAKAMOTO, Tokyo Tech, CHRISTOPHER BIDINOSTI, Univ. of Winnipeg, YUICHI ICHIKAWA, RIKEN Nishina Center, TOMOYA SATO, YUICHI OHTOMO, SHUICHIRO KOJIMA, CHIKAKO FUNAYAMA, TAKAHIRO SUZUKI, MASATO TSUCHIYA, Tokyo Tech, TAKESHI FURUKAWA, Tokyo Metropolitan Univ., AKIHIRO YOSHIMI, Okayama Univ., TAKASHI INO, KEK, HIDEKI UENO, RIKEN Nishina Center, YUKARI MATUO, Hosei Univ., TAKESHI FUKUYAMA, RCNP, Osaka Univ., KOICHIRO ASAHI, Tokyo Tech — A permanent electric dipole moment (EDM) can be detected as a difference between the spin precession frequencies measured with an electric field applied parallel and antiparallel to a magnetic field. We aim to make a measurement of the $^{129}$Xe EDM at a level of d$\sim 10^{-28}$ ecm by using a nuclear spin maser. The amplitude of the maser signal is proportional to the nuclear spin polarization. The polarization of $^3$He that acts as a co-magnetometer, is sensitive to the interactions with the electrodes used to generate the electric field. Previously, we used a transparent electrode made of ITO (Indium Tin Oxide) to allow transmission linearly polarized laser light into the cell. However, $^3$He polarization in a cell with such electrodes was measured to be $\sim$ 0.1%, which is ten times smaller than no electrodes. In order to solve the problem, we adopted an electrode made from a mesh of Molybdenum. The geometry also reduces the contact area between $^3$He gas and the electrode. We measured $^3$He polarization at a cell with the mesh electrode by means of adiabatic fast passage NMR.

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