

The presented thesis is dedicated to particle identification in COMPASS RICH-1 experiment which is located in European Organization for Nuclear Research (CERN). For particle identification Cherenkov radiation is used, which is described in the thesis together with detection principles. Current aim in detector upgrade is replacing a part of Multi Wire Proportional Chambers (MWPC) in peripheral regions of the detection surface by a suitable photon detector so as to guarantee one-photon detection. For this purpose the hybrid photon detector based on THGEM and MicroMegas technologies was developed. The hybrid detector test results are presented in the thesis.