- CsI(pure) inorganic scintillation crystal is an appropriate material for the electromagnetic calorimeter of the modern $e^+ e^-$ Super factories.
- Compact, insensitive to magnetic field and modest price Hamamatsu APD S8664-55 is an appropriate photosensitive element, several APDs in one counter provide necessary signal readout redundancy.
- An essential increase (x 6 times) of the light output of the CsI(pure)+APDs counter was achieved with WLS plates of special shape made of PMMA and the nanostructured organosilicon luminophores (NOL-9).
- The ENE of the counter based on CsI(pure) + WLS(NOL-9) + 4 APDs was measured to be ENE = (0.33 ± 0.03) MeV, which allows one to achieve high energy resolution (σ_E/E = 3.7%) even for the small energy gammas with E = 100 MeV.
- The pipeline readout with on-board waveform analysis (already implemented in Belle II calorimeter) will provide good time resolution (to suppress beam background) and ability to work at high occupancies.
- The calorimeter prototype of 16 counters based on CsI(pure) crystals, WLS(NOL-9) plates and Hamamatsu S8664-55 APDs is under construction. All necessary electronics (preamplifiers, preliminary Shaper-ADC boards) have been developed and produced. It will be studied on the test beam facility in 2019 in Budker Institute of Nuclear Physics.