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Experimental complex ACCULINNA-2: status and development

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The ACCULINNA-2 fragment separator was newly built at FLNR JINR [<http://aculina.jinr.ru/>] for providing RIB with $Z \leq 20$ and 20-40 AMeV. The driver U-400M cyclotron is under reconstruction until end of 2022.

The experimental complex ACCULINNA-2 includes a wide range of tools and detector systems:

- Beam equipment: production target unit, beam dump, wedge and slits.
- Additional RIB cleaning device - RF-kicker for proton-rich isotopes.
- T-o-F and tracking ion-by-ion secondary beam diagnostic.
- Cryogenic isotope thin foil physical targets:
 - o H₂, D₂ gas/solid
 - o Unique T₂ gas/liquid
 - o Low temperature He₃, He₄ gas/liquid
- 20-1500 mkm thickness SSD with scintillator arrays allows one to combine dE-E telescopes for the wide range of tasks.
- Neutron wall based on monocrystalline stilbene (neutron/gamma pulse-shape identification) and plastic segmented array.
- Zero-angle spectrometer for beam like charged particle detection.

Thus, the directions developed by our team cover the whole spectrum of experimental tasks at ACCULINNA-2 and can be applied at other facilities.

Primary authors: GORSHKOV, Alexander (FLNR JINR); BEZBAKH, Andrey (FLNR JINR); FOMICHEV, Andrey; Mr BIARE, David (FLNR JINR); KAMIŃSKI, Grzegorz (Flerov Laboratory of Nuclear Reactions, Joint Institute for Nuclear Research); TER-AKOPIAN, Gurgun (Joint Institute for Nuclear Research, Dubna, Russia); MUZALEVSKII, Ivan (JINR); GRIGORENKO, Leonid (FLNR, JINR); GOLOVKOV, Mikhail (FLNR); SHAROV, Pavel (JINR); BELOGUROV, Sergey (FLNR JINR); Mr KRUPKO, Sergey (FLNR); STEPANTSOV, Sergey (FLNR JINR); CHUDOBA, Vratislav (FLNR JINR)

Presenter: Mr KRUPKO, Sergey (FLNR)

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