

## Referee report

on the proposal PROPERTIES OF HOT NUCLEI ON RELATIVISTIC BEAMS OF THE  
NUCLOTRON/NICA COMPLEX (Project FASA)

(within theme 02-1-1087-2009/2020 of the JINR Topical plan)

As stated in the project, its aim is to study the properties of hot nuclei (with excitation energy more than 3 MeV per nucleon) produced in collisions of light relativistic ions with heavy targets and its main goal is defined as studying of the space-time characteristics of the hot nuclei and collective flows in such interactions.

My understanding is that the authors propose a continuation of a long going activity within the theme 02-1-1087-2009/2020, namely the experiment FASA. Anyway, as the proposal is presented as for a new project within the above theme, I consider it as such.

The proposal, as a whole, is fragmentary and vague. The physics case is not elaborated in due detail. The main results obtained by the FASA team are listed, but a general picture of the phenomena studied and the physics context where this picture fits is missing.

On the methodical side almost nothing is presented. Just a picture of the apparatus and one dE-E plot are displayed without clear explanations. Work characteristics of the detectors and data about the performance of the set-up are missing. Even the measurement principles – what is measured, how it is measured and with what precision – are not given.

Given the considerations above, it is difficult to evaluate the physics merit of the expected results of the project and whether they can be reached.

In addition, despite the scarce information given in the proposal, I think that most of the planned there measurements could be performed with the BM@N set-up.

The requested cash resources are not big. Besides travel money, the rest is aimed at replacement of the CAMAC based FEE and DAQ by a VME based ones. There is no justification why this is needed. Event rates, reading times, dead time introduced by DAQ and its throughput, etc. – nothing is given.

The accelerator resources asked for are also modest and again they are asked without any detail concerning the type of the light ions, beam energy and intensity, etc.

The manpower, in terms of percentage of time expected to be devoted to the project by the people involved, is not given.

In conclusion, due to the fact that important pieces of information needed to evaluate correctly the proposal are missing, I cannot support it and recommend that it be rewritten according to the high standards of the JINR PAC for Particle Physics and submitted again if the authors decide to do so.