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Characterization of Incomplete Fusion Reaction with AFRODITE and DIAMANT

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Abstract content
   (Max 300 words)

The project concerns the nuclear reaction 7Li+176Yb at 50MeV which was carried-out using the AFRODITE and DIAMANT facility of iThemba LABS.

A 7Li nuclide is considered suitable for breakup fusion(Incomplete fusion) reaction because of its well developed cluster structure of an alpha-particle and triton which are weakly bound in this nucleus. One of the fragments may be captured by the target while the other escapes at the beam velocity. Light charged-particles(alphas, tritons and protons) were detected with the DIAMANT(CsI) array in coincidence with gamma-rays detected by the AFRODITE(HPGe) spectrometer.

The project will involve data reduction to produce charged-particle-gated gamma-gamma coincidence matrices which will be analyzed with RADWARE. Insights will be gained into the Incomplete fusion reaction mechanisms initiated by the breakup of the incident 7Li projectile.

Apply to be
 consider for a student
   award (Yes / No)?

Yes

Level for award
 (Hons, MSc,
   PhD)?

MSc

Main supervisor (name and email)
and his / her institution

Simon Mullins, smm@tlabs.ac.za, from iThemba Labs-Johannesburg

Would you like to
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 Proceedings (Yes / No)?

No

Primary author: Mr BONGANI, maqabuka (University of Johannesburg)

Presenter: Mr BONGANI, maqabuka (University of Johannesburg)

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