

Date: Thu, 10 Jul 2003 13:44:20 -0400
To: HYSPEC
From: "Stephen M. Shapiro" <shapiro@bnl.gov>
Subject: RE: HYSPEC News-03-2
Cc: doon-bnl.gov,pdj@bnl.gov, Helen.Kerch@science.doe.gov,
andersonian@sns.gov, rk Crawford@anl.gov, broholm@jhu.edu
Bcc:
X-Attachments: :Macintosh HD:420294:Response to Review.2:

Dear IDT Members,

It has been about 6 months since you have heard from us at Brookhaven about the status of HYSPEC. Well, as the adage says, "good news is worth waiting for", and there is a significant amount of good news to report.

DOE PROPOSAL FOR FUNDING:

Our last communication was early this year (Jan. 7, 2003) and we reported that a proposal for funding was submitted to DOE just before Christmas. The proposal was reviewed and was highly appraised by two of the three reviewers. The reviewer comments were transmitted to us in May. One reviewer stated: " This proposal has great scientific and technical merit. [T]his is an excellent proposal for an instrument, which is ideally matched to the SNS". Another reviewer commented, "I find this to be an exciting proposal that I believe should be supported.The design is complex, but each of the individual parts is well-tried and understood." While the third reviewer was rather negative, we believe this was because of some misunderstanding of the goals and design of HYSPEC. We took his/her comments very seriously and replied with a rebuttal addressing the criticisms of this reviewer. Attached is a copy of our response to the referee which addresses some of the important, but sometimes subtle, issues of the HYSPEC design, and may be of a general interest for you.

We apparently adequately answered the referee's objection because the proposal was approved for funding by DOE and passed the important CD0 (Critical Decision Zero), which is the first milestone for a construction project. Four other instruments were also approved for construction. HYSPEC is now a reality and will be built at the Spallation Neutron Source! SNS will be responsible for the construction

of the instrument and consequently the bulk of the money will be sent to Oak Ridge. However, there will also be funds for the development of the scientific community, which the IDT will have some control over.

INSTRUMENT SCIENTIST :

The IDT and the design team will continue to play an important role in developing HYSPEC and insuring that it will meet the expectations and satisfy our scientific needs. However, as the project has passed the CD0, the need to hire an instrument scientist became urgent. As you probably know, in anticipation, the job announcements were posted shortly after the proposal was submitted to DOE. We were impressed by a very strong pool of candidates, receiving in total over 20 applications, which emphasizes the scientific appeal of HYSPEC. A Selection Committee have identified the top candidate, and we interviewed him at BNL and at Oak Ridge in early June. He is Mark Hagen, currently at ANSTO, and we are pleased to announce that he has recently accepted the position.

Mark has had a long career in inelastic neutron scattering, earning his PhD with Roger Cowley and having post-docs at ILL and Oak Ridge. He also has extensive experience in single crystal work at a spallation source using PRISMA at ISIS. We believe that he is the ideal candidate for the position and we look forward to him joining us early next year. Mark will be an SNS employee but will spend the first two years at Brookhaven working with our design team and becoming fully acquainted with HYSPEC. He will also accumulate many frequent flyer miles, traveling back and forth to Oak Ridge!!

BEAM LINE ASSIGNMENT:

HYSPEC requires a significant amount of space perpendicular to the beam direction. There were several iterations on the location of the instrument, and a satisfactory solution was recently achieved. It will be positioned on BL 14B and extend to the perimeter wall of experimental hall. Snuggled in below HYSPEC on BL 15 will be the neutron spin echo instrument proposed by a consortium of German scientists. You can see the current draft layout of the two instruments at this location on HYSPEC web page: http://neutrons.phy.bnl.gov/CNS/hyspec/images/HYSPEC_BL14B_0305.jpg.

INTER-COMPARISON OF SNS INELASTIC INSTRUMENTS:

We performed a Monte Carlo study of the intensity-on-sample of the four inelastic instruments approved for funding at the SNS: CNCS, ARCS, SEQUOIA and HYSPEC and reported it in our DOE proposal. We showed that in the incident energy range of 5-50 meV HYSPEC outperforms the other instruments in terms of flux-on-sample. These calculations were recently repeated by Granroth and Abernathy and presented at ICANS-XVI in May. They used a different method for normalizing the intensities because the four instruments are optimized for different energies and resolutions. For the optimized operating conditions of HYSPEC, they confirmed our conclusions. They further stated that "...the HYSPEC instrument bridges the cold and thermal to epithermal energy ranges." and "...the HYSEC instrument [is] an ideal instrument to use for polarized inelastic studies and studies of specific positions in Q-w space"---the precise goals of our design. The full paper is also reproduced on our web site along with the paper on HYSPEC, also presented at the conference.
http://neutrons.phy.bnl.gov/CNS/hyspec_index.html

NEXT:

The next step will be to develop a more accurate cost estimate for the instrument and the time line for the HYSPEC construction. This will require more engineering and design studies. By the end of the summer or early fall we expect to have an SNS engineer assigned to work on HYSPEC. Also we shall be meeting with the SNS instrument team to work out agreements about sharing the duties and responsibilities concerning the instruments design and operation. These will be the first step towards the formal Memorandum of Understanding which eventually will have to be signed between the SNS and the IDT.

Please stay current of the new developments of the HYSPEC project via our web site above, and if there are any questions or suggestions do not hesitate to contact us.

Steve Shapiro on behalf of the HYSPEC design team.