MINUTES of the LIBRA Kick-off Meeting

held at the Institute of Nuclear Physics of NCSR "Demokritos"
Athens, March 11, 2009

The Kick-off meeting of LIBRA took place on March 11, 2009 at the Institute of Nuclear Physics of NCSR "Demokritos" in Athens, Greece. A welcome dinner was organized the evening before the meeting, i.e. on March 10, 2009. This served as an informal get-together for the participants to get acquainted with each other. More than 50 scientists were invited to attend the kick-off meeting together with the EC Project Officer for LIBRA Ms Anna Remond-Niewiarowska, the Research and Technology Attaché of the Permanent Representation of Greece to the EU Dr. Christos Vasilakos, the Head of the PESC Unit of the European Science Foundation Dr. Patrick Bressler, the REGPOT-NCP for Greece Mrs. Georgia Tzenou, the Gen. Director and President of the Governing Board of NCSR "Demokritos" Dr. Dimitrios Niarchos and the Directors of the eight Institutes of NCSR "Demokritos". A participants list of the Kick-off meeting is given in Annex I.

Open Meeting

The open meeting started with welcome addresses by Dr. Dimitrios Niarchos, Gen. Director and President of the Governing Board of NCSR "Demokritos" followed by Prof. Muhsin Harakeh, Chair of the LIBRA Project Advisory Committee (PAC) and Dr. Sotirios Harissopulos, LIBRA Project Coordinator and Deputy Director of the Institute of Nuclear Physics (INP) of NCSR "Demokritos". The meeting comprised 15 oral presentations, a round table discussion and a closed session of the PAC. From the 15 talks, four were given by scientists representing institutes collaborating with INP within LIBRA (Project Partner Institutions – PPI) and seven by scientists representing Greek user-groups interested in using the facilities to be established by LIBRA. In addition, three presentations were given from INP staff members and one from an invited scientist from a regional institute, i.e. the "Ruđer Bošković" Institute (RBI) in Zagreb, Croatia. The detailed program of the kick-off meeting is given in Annex II.

The first presentation of the program was devoted to the presentation of the LIBRA project by the coordinator Dr. S. Harissopulos. The next talk given by Dr. A. Karydas addressed the infrastructure existing at the TANDEM Accelerator Laboratory of INP and the upgrade planned within LIBRA. The following two presentations informed the participants on activities running in PPI that address applications of ion-beams and are relevant to the LIBRA objectives and deliverables. The fifth (invited) speaker, Dr. M. Jaksic presented the applications program of RBI, Zagreb. The first session of the meeting was then closed with a coffee break and a guided tour at the TANDEM Accelerator Laboratory.

The second session started with a presentation of Dr. H. W. Becker from the Dynamitron-Tandem Laboratory (DTL) of the University of Bochum, Germany, on the local nuclear astrophysics research program and the joint activities foreseen within LIBRA. The next speaker, Dr. Anne Lefebvre-Schuhl, presented the research program of

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another PPI, i.e. the CSNSM in Orsay, France, with emphasis on the PAPAP accelerator that will be transferred from Orsay to "Demokritos" within the LIBRA project. The session included five more presentations reporting on the activities of external user groups running at the TANDEM Accelerator Laboratory. The first presentation, given by Prof. A. Clouvas from the Aristotle University (AU) of Thessaloniki, Greece, informed participants on a series of ion-induced electron emission experiments carried out at the TANDEM accelerator of "Demokritos". In the next talk, Prof. Rosa Vlastou from the National Technical University of Athens (NTUA) presented the activities of her group that uses secondary neutron beams delivered by the TANDEM accelerator to study nuclear structure properties as well as determine cross sections of (n,2n) reactions that are required for the design of innovative Accelerator Driven Systems (ADS) related to the future production of clean and safe nuclear energy as well as for the transmutation of nuclear waste. The next speaker, Dr. Michael Compitsas from the Hellenic National Research Foundation in Athens, Greece, presented results from analytical studies of thin films based on ion-beam techniques. These studies aim at the development of hydrogen-sensing devices that allow safe control of the H-gas usage. The next two presentations addressed future research activities at the TANDEM accelerator of "Demokritos". In the one given by Prof. Th. Tzouros from the University of Crete, Greece, participants were informed on the installation of an Auger-Spectrometer aiming at the study of the collision dynamics of few-electron systems using multiply-charged ions from the TANDEM accelerator of "Demokritos". Prof. Tzouros presented his experimental setup that was transferred from Kansas State University, US, to "Demokritos". In the session-closing presentation, Dr. Ion Stamatelatos reported on the activities planned by the Group from the Institute of Nuclear Technology and Radiation Protection of NCSR "Demokritos" to use secondary neutron beams delivered by the TANDEM accelerator of INP for medical applications such as small animal body composition studies based on (n,2n), (n,α) and (n,n'γ) reactions on life-vital elements like ^{14}N, ^{31}P, ^{12}C and ^{16}O. After the end of the session, a buffet lunch was offered to all participants.

The third and last session included 3 presentations given by Prof. M. Kokkoris (NTU Athens) and Prof. M. Manolopoulou (AU Thessaloniki) and Dr. Th. Mertzimekis (INP/NCSR "Demokritos"). The first one reported on the results obtained for the Ion Beam Analysis Nuclear Data Library (IBANDL), a Coordinated Research Project of IAEA, in which the NTU of Athens, the AU of Thessaloniki and the INP of NCSR "Demokritos" participate with the aim to deliver cross-section data of proton- and deuteron-induced reactions for materials analysis. The second talk reported on a series of measurements at the TANDEM accelerator of "Demokritos" aiming at testing the response of neutron detectors to neutrons of different energies and fluxes. In the last presentation of the session, Dr. Mertzimekis presented the activities planned by the INP group aiming at the study of nuclear structure with an emphasis on the construction of a new experimental device ("plunger"). This will be coupled to the MINIBALL detector array to determine lifetimes of excited nuclear states that will allow testing the predictions of various nuclear structure models. The MINIBALL array is presently installed at the REX-ISOLDE facility at CERN.

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The session closed with a round table discussion. As first, user groups were asked to present their needs in terms of beam time and infrastructure. It was agreed that the PAC members, Prof. D. Balabanski and Prof. P. Misaelides will seek contributions by the user groups of the TANDEM accelerator to organize a priority list of the user needs. The LIBRA coordinator presented in detail the profile of the scientists and technicians to be hired within LIBRA and the basic timetable of the planned upgrade works at the TANDEM accelerator. He underlined the man-power deficiencies in night-shifts very often required by the external users and asked for contributions and suggestions by the users as well as the PAC members. Different ideas were presented by the participants and it was agreed that the LIBRA PAC will examine the related problems and come back with suggestions in the next PAC meeting scheduled around the end of November beginning of December 2009. Before the closing of the round table discussion, the LIBRA coordinator asked from the speakers for permission to include their presentations at the LIBRA's website, i.e. http://libra.inp.demokritos.gr, together with any other material informing on the kick-off meeting. All speakers responded positively to this request.

Closed PAC Meeting

The round-table discussion was followed by the closed session of the LIBRA PAC. This first meeting of the LIBRA PAC was chaired by Prof. Muhsin Harakeh and was attended by all the other PAC Members, i.e. Prof. Reiner Krücken, Prof. Rauno Julin, Prof. Dimiter Balabanski and Prof. Panagiotis Misaelides, except for Prof. Pier-Andrea Mandó who excused himself for not being able to attend this time because of other commitments. The LIBRA Coordinator, Dr. Sotirios Harissopulos, was also present ex-officio in the PAC meeting.

In the beginning of the meeting, all PAC members acknowledged the good organization of the Kick-Off meeting and its well-balanced scientific program. The PAC members commented very positively on the variety of the research topics covered by the user groups of the TANDEM accelerator of "Demokritos" and underlined the importance of the LIBRA project for the whole scientific community, national, regional and European. The successful realization of LIBRA will lead to an excellent scientific environment for ion-beam based multi-disciplinary research. The PAC unanimously decided to impress upon the Greek funding authorities and the Board of Directors of NCSR "Demokritos" the importance of LIBRA for the capacity of the Greek research potential as well as for the international nuclear physics community in the hope of attracting additional support for LIBRA from national sources, both in terms of infrastructure as well as research positions.

The Chair of PAC asked the LIBRA Coordinator to provide the PAC members with an action plan of LIBRA activities the soonest possible so that the monitoring of LIBRA will be facilitated. The Coordinator committed himself to provide this by end of July 2009.

The PAC discussed next the current problem of lacking the man-power to run night-shifts at the TANDEM accelerator. The problem arises because only one of the two operators (Mr. K. Papakostopoulos) can run night-shifts, however without being paid accordingly by the administration of NCSR "Demokritos". To compensate this, he is granted by the Head of the TANDEM Accelerator Laboratory or the Director of the Institute one day-off for every night-shift. In practice, this results in an absence of

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two days, since the operator is not staying in the lab after the end of his night-shift. Taking into account that many external users ask very often for night-shifts, the major part of which is undertaken by Mr. Papakostopoulos, the net result is that the Laboratory is forced to go without him for a period of almost two months all together. The PAC agreed that this cannot continue in the future and solutions have to be found, also from the side of the user groups.

The LIBRA Coordinator mentioned his efforts to achieve overtime payment for operators carrying out night-shifts without success, apparently due to the running economical crisis. He mentioned that the TANDEM Accelerator Laboratory is currently negotiating a Collaboration Agreement with the European Space Agency (ESA) that, if successful, will provide with some additional funds that could be used to contribute to overtime payment of the operators. In addition, he recalled his proposal to the user groups to train at least one of their members and their graduate students in the operation of the TANDEM accelerator. This training could be provided by the Tandem staff periodically leading to some kind of informal "Tandem driving license". This way, external user groups could decrease the load of the Tandem group to perform night-shifts and allow them to be available when they are most needed. This will also facilitate the planning of their experiments with less dependence on the availability of the INP group members. The LIBRA Coordinator stressed that this is the situation in most European Tandem and Van de Graaff labs and that the INP group cannot abandon its own scientific program that is continuously increasing in order to act as "operator" for external groups. The latter have to actively contribute to the solution of the night-operator problem. Automation of the whole accelerator complex is another possible solution, which cannot, however, be realized in the near future.

Furthermore, the PAC members expressed their skepticism regarding the increased need for beam-time of the external users during the course of the LIBRA project. The successful evolution of LIBRA depends strongly on well-scheduled, often long, breaks in the operation of the TANDEM accelerator. In view of these it is necessary, on one hand, to inform well in advance the user groups and, on the other, put an upper limit on the available beam hours during this period. The LIBRA Coordinator emphasized that the INP group will do the best to provide, on average, 2 weeks of beam time every month, which seems to be a realistic upper limit. The beam time will be offered in 4-month periods (January-April, May-August, September-December). The call for beam-time allocation will be announced in due time to all potential users that will have to submit their requests via the website. This procedure is scheduled to be launched from September 2009. The LIBRA Coordinator underlined that if the negotiations with ESA will be successful, ESA will have a priority in the allocation of the beam time as foreseen by the relevant agreement to be signed.

Prof. Misailides proposed to distribute a simple questionnaire to the users to survey their needs in beam-time per year and operator night-shifts. He and Prof. Balabanski will evaluate this questionnaire and present the results in the next PAC meeting. This will facilitate a better organization of the beam-time at the TANDEM accelerator in the future.

The PAC members further proposed to have every year at least one TANDEM User-Group meeting. The suggestion made by Prof. Rosa Vlastou during the round table discussion of the Kick-Off meeting to organize the TANDEM User-Group meeting during the Annual

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Symposium of the Hellenic Nuclear Physics Society is not covering a major portion of the users, since many of them are not nuclear physicists and hence do not participate in the Annual Symposium of the HNPS that, additionally, does not take place in Athens every year. Given these, the PAC members unanimously agreed that the TANDEM User-Group meeting should be held the day before the PAC meetings. This way the PAC members will be able to derive a clear picture of the needs of the users, their achievements and interact directly with them.

Finally, the PAC members discussed the tentative date of the next PAC meeting. The Chair proposed the period between November 15 and December 15, 2009. The members agreed and the meeting was closed.

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ANNEX I

LIBRA Kick-off meeting, Inst. of Nuclear Physics, NCSR "Demokritos"
11 March 2009

Program Advisory Committee (PAC)

	Name	Affiliation
1	Dimiter Balabanski (PAC member)	Inst. for Nuclear Research and Nuclear Engineering-INRNE, Sofia, Bulgaria
2	Muhsin Harakeh (PAC chair)	Kernfysisch Versneller Instituut-KVI, University of Groningen, Netherlands
3	Rauno Julin (PAC member)	Department of Physics, University of Jyväskylä, Finland
4	Reiner Kruecken (PAC member)	Physik Department E12, Technische Universität München, Germany
5	Panagiotis Misaelides (PAC member)	Radiochemical Lab, Department of Chemistry, Aristotle University of Thessaloniki, Greece
6	S. V. Harissopulos (LIBRA Coordinator)	Tandem Accelerator Laboratory Institute of Nuclear Physics, NCSR "Demokritos", Athens, Greece

Participants

	Name	Affiliation
7	Thomas Calligaro	C2RMF, AGLAE Laboratory – Le Louvre, Paris, France.
8	Hans-Werner Becker	Dynamitron-Tandem-Labor, Ruhr-Universität Bochum, Bochum, Germany
9	Geoff Grime	Surrey Ion Beam Centre, Adv. Technology Institute, Univ. of Surrey, UK
10	Roger Webb	Surrey Ion Beam Centre, Adv. Technology Institute, Univ. of Surrey, UK
11	Anne Lefebvre-Schuhl	CSNSM, Orsay, France
12	Milko Jaksic	Ruđer Bošković Institute (RBI), Zagreb, Croatia
13	Rosa Vlastou	Department of Physics, National Technical University of Athens, Greece
14	Michael Kokkoris	Department of Physics, National Technical University of Athens, Greece
15	Michael Kompitsas	National Hellenic Research Foundation, Athens, Greece
16	Ion Stamatelatos	Institute of Nuclear Technology, NCSR "Demokritos", Athens, Greece
17	Fedra Tzika	Institute of Nuclear Technology, NCSR "Demokritos", Athens, Greece
18	Alexandros Clouvas	Nuclear Technology Laboratory, Aristotle University of Thessaloniki, Greece
19	Theo Tzouros	Department of Physics, University of Crete, Heraklion, Crete, Greece
20	Athanasios Godelitsas	Dept. of Mineralogy and Petrology, University of Athens, Greece
21	Metaxia Manolopoulou	Dept. of Nuclear and Part. Physics, Aristotle Univ. of Thessaloniki, Greece

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22	Andreas Karydas	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
23	George Fanourakis	Institute of Nuclear Physics, NCSR "Demokritos", Athens, Greece
24	Vivian Demetriou	Institute of Nuclear Physics, NCSR "Demokritos", Athens, Greece
25	Dennis Bonatsos	Institute of Nuclear Physics, NCSR "Demokritos", Athens, Greece
26	Tassos Lagoyannis	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
27	Theo Mertzimekis	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
28	Michael Axiotis	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
29	Miltiades Andrianis	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
30	Theodore Konstantinopoulos	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
31	Vicky Kantarelou	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
32	Dimosthenes Sokaras	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
33	Varvara Foteinou	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
34	George Provatas	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
35	Tania Avgoulea	Tandem Accelerator Laboratory, Inst. of Nuclear Physics, NCSR "Demokritos", Athens, Greece
36	Dimitris Koukogeorgakos	Institute of Nuclear Technology, NCSR "Demokritos", Athens, Greece
37	Eleni Verrelli	Department of Physics, National Technical University of Athens, Greece
38	Ioannis Kostopoulos	Department of Physics, National Technical University of Athens, Greece
39	Athanasios Markou	Institute of Nuclear Physics, NCSR "Demokritos", Athens, Greece
40	Dimitris Katsikopoulos	University of Oviedo, Oviedo, Spain

Apart from the above listed participants, the following scientists attended the 1st session:

	Name	Affiliation
1	Dimitrios Niarchos	Gen. Director and President of the Governing Board of NCSR "Demokritos", Aghia Paraskevi, Athens, Greece
2	Androula Nassiopoulou	Ex-Director, Institute of Microelectronics, NCSR "Demokritos", Aghia Paraskevi, Athens, Greece
3	Gabriel Pantelias	Director, Institute of Radioisotopes and Radiodiagnostic Products, NCSR "Demokritos", Aghia Paraskevi, Athens, Greece
4	Ioannis Papazoglou	Director, Institute of Nuclear Technology and Radiation Protection NCSR "Demokritos", Aghia Paraskevi, Athens, Greece
5	Effie C. Tsilibary	Director, Institute of Biology, NCSR "Demokritos", Aghia Paraskevi, Athens, Greece.
6	Dimitrios Tsoukalas	Director, Institute of Microelectronics, NCSR "Demokritos", Aghia Paraskevi, Athens, Greece

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ANNEX II

LIBRA Kick-off meeting, Institute of Nuclear Physics, NCSR "Demokritos", March 11, 2009

MEETING PROGRAMME

09:00 – 09:10	Welcome addresses by Dr. D. Niarchos, President of NCSR "Demokritos", Prof. M. Harakeh, LIBRA-PAC Chair, and Dr. S. Harissopulos, Deputy Director of INP	
1ST SESSION	**Chairman:**	**Muhsin Harakeh**
TIME	SPEAKER	TITLE
09:10 – 09:45	Sotirios Harissopulos *(INP – Demokritos)*	The LIBRA Project
09:45 – 10:05	Andreas Karydas *(INP – Demokritos)*	Applications of Ion Beams and X-Rays at the Tandem Laboratory: Status and Perspectives
10:05 – 10:25	Thomas Calligaro *(C2RMF – CNRS, Paris)*	The Louvre's accelerator sheds new light on arts and archaeology
10:25 – 10:45	Roger Webb *(SIBC – U. Surrey)*	An overview of activities at the Surrey Ion Beam Centre
10:45 – 11:05	Milko Jaksic *(RBI – Zagreb)*	Implementation of Ion-Beam Analysis techniques in the Zagreb microprobe facility
11:05 – 11:30	COFFEE BREAK and GUIDED TOUR AT THE TANDEM ACCELERATOR	
2ND SESSION	**Chairman:**	**Reiner Krücken**
11:30 – 11:50	Hans-Werner Becker *(DTL – U. Bochum)*	The research program of the Dynamitron-Tandem Laboratory of the University of Bochum, Germany
11:50 – 12:05	Anne Lefebvre-Schuhl *(CSNSM – Orsay)*	CSNSM – Orsay : A review of scientific activities and infrastructure
12:05 – 12:15	Alekos Clouvas *(U. Thessaloniki)*	Ion-induced electron emission experiments at the Tandem accelerator of "Demokritos"
12:15 – 12.30	Rosa Vlastou *(NTU Athens)*	Neutron-induced reactions at the Tandem accelerator of INP-Demokritos
12:30 – 12:45	Michael Compitsas *(NHRF Athens)*	Analytical capabilities of the Demokritos Tandem accelerator in metal oxide thin film technology
12:45 – 13:00	Theo Tzouros *(U. Crete)*	Electron spectrometry of highly-charged ions: Exploring the collision dynamics of few-electron systems
13:00 – 13:15	Ion Stamatelatos *(INTRP – Demokritos)*	Large-sample analysis and medical applications at the Tandem accelerator of INP.
13:15 – 15:00	BUFFET LUNCH	
3RD SESSION	**Chairman:**	**Rauno Julin**
15:00 – 15:15	Michael Kokkoris *(NTUA Athens)*	NRA studies at the INP Tandem accelerator: status and perspectives
15:15 – 15:30	Metaxia Manolopoulou *(U. Thessaloniki)*	Response of Helium proportional counters on fast neutrons
15:30 – 15:45	Theo Mertzimekis *(INP/"Demokritos")*	Nuclear structure studies: prospects within LIBRA
15:45 – 16:30	Round table discussion on LIBRA (New posts, Infrastructure, Users needs etc)	**Chairman: Dimiter Balabanski**
16:30 – 17:00	**PAC Meeting**	**(Closed session)**

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