

Foreword

The Laboratoire Léon Brillouin is a French research infrastructure supported jointly by *the Commissariat à l’Energie Atomique et aux Energies Alternatives* (CEA) and the Centre National de la Recherche Scientifique (CNRS); it constructs and operates spectrometers around Orphee, a 14MW reactor operated by the CEA since 1980. Its exceptional situation in the south west of Paris, in the scientific centre of Saclay, nearby faculties, engineers schools and other large scales facilities such the synchrotron Soleil, promotes contacts, discussions and stimulates new collaborations. As a national facility, its management of beam time is quite flexible allowing more tests, thoughts and discussions between beginners and experts, exploring new areas or experiment preparation, and access to industrial partners.

The year 2009 saw the beginning of a number of projects and new thinking which allow us to start the coming decade with enthusiasm and a constructive attitude. Each of these operations corresponds in various ways to the three goals of this large scale facility LLB-Orphée : research, service and training. If we were to sum up our activities in a few numbers, we would say that this laboratory is composed of 112 people, with about 30% of students, post-docs and visitors, carrying out more than 400 experiments a year with 500 visitors, 33% of whom are from foreign countries (mostly supported by the European Access Program of NMI3), on 22 spectrometers which will be renewed in the CAP2015 project. These experiments were performed thanks to the very great competence of the scientific and technical teams, their unity and their ambition in research. Thanks are also due to the technical teams at Orphée, under the guidance of X. Bravo, which made it possible to function with 194 days of beam time. The harmony between these teams encouraged us to choose a new logo, with which each person can identify. The scientific results obtained were printed in 190 publications in refereed scientific journals per year in 2008 and in 2009, more than 70% of national production being associated with the LLB according to an advanced publishing survey which we have undertaken.

We have brought our selection committees, now numbering five, up to date according to the scientific community’s demands. New directions in research are at the center of the instrumental development program CAP2015 at LLB. This program provides for the modernization or reconstruction of nearly half the laboratory’s instruments by 2015. This will give LLB an excellent quality of instrumentation at the disposal of the French and European communities in the following years.

Aside its function of large scale facility, the LLB carries out its own scientific research program summarized in three main axes: hard matter and magnetism, soft matter and biophysics, materials and nano-sciences. Internally, it should also be noted that our researchers have achieved a high level of success with their national and international projects. We have hired new engineers and technicians to replace those who retired in 2008, we have added a young researcher in the CNRS competitive exam, and teacher-researchers requesting attachment to our unit, emphasizing our involvement in training and education. Training sessions organized by LLB (such as the FAN) and those in which we participate (JDN, HERCULES) are completed by practical experience for students during their Master degrees, or from engineering schools. We plan to offer this opportunity to a larger number of students in the future, in collaboration with the synchrotron Soleil. The year 2010 will see some major events strengthening of our local, national and international collaborations and the visit of the scientific and technical advisory committees of experts nominated by the French safety authority (ASN) settling and ensuring the activity of our reactor for the next ten years.

We present here some of the technical and scientific achievements of 2009 and hope you will enjoy them.

Christiane Alba-Simionesco

Susana Gota-Goldmann

Alain Menelle