

**Minutes of
the CARE-JRA1-WP4 (Thin film production) Collaboration Meeting ,
held at the Andrzej Soltan Institute for Nuclear Studies (IPJ), Swierk near Warsaw,
on February 8-9, 2005**

Participants: J. Langner (IPJ), S. Kulinski (IPJ), D. Proch (DESY), M.J. Sadowski (IPJ),
P. Strzyzewski (IPJ) and S. Tazzari (Tor Vergata Uni.)

Apologies have been received from: L. Catani, A. Cianchi, and R. Russo.

Main topics: It was agreed that the agenda includes:

1. Approval of the final version of the CARE/JRA1 Annual Report 2004
2. Agreement on the organization of two or three WP4 Collaboration Meetings in 2005
3. Discussion of the publication policy
4. Discussion of recommendations from the International Advisory Group
5. Modeling and design of new magnetic filters for UHV arc facilities

Ad 1. The final version of the CARE/JRA1 Annual Report 2004, as obtained from Prof. D. Proch, has been analyzed. It was found that there are no serious errors, but three amendments have been suggested: 1. To give full information about the first publication (to add *Czech. J. Phys.* **54**, *Suppl. C (2004) C914-C921*; 2. To add information about the paper presented at the EPAC-2004 (to add *Proc. EPAC-2004, Lucerne, Switzerland, June 2004, P.*); 3. To correct information about the polarization of a sample support (the word “*positive*” should be replaced by “*negative*”). The version with these improvements has been approved.

Ad 2. Taking into consideration recommendations of the International Advisory Group it has been agreed that in addition to the reported meeting (held in Swierk on Feb. 8-9, 2005) two or three other meetings will be organized. It was suggested to hold the second WP4 Collaboration Meetings in Hamburg, possibly in May 2005, and the third one - in Rome, possibly in September or October 2005. The dates will be agreed through e-mails later on.

Ad 3. According to the publication policy, minutes of two WP4-Collaboration Meetings, (as held in Rome on Jan. 24, 2005, and in Swierk on Feb. 8-9, 2005) will be sent to the JRA1 coordinators when the contents are agreed. Also a concise paper on “Research activities within a frame of the CARE-JRA1-WP4 Thin Film Cavity Production work-package”, which has already been prepared for publication in *Elektrotechnika* (2005), will be sent once again for the registration.

It has been agreed that abstracts will be prepared for presentations at coming conferences, i.e. the SRF-2005 Workshop (to be held at Cornell, USA), the SPIE Congress on Optics and Optoelectronics (to be held in Warsaw, Poland), and the International Conference PLASMA-2005 (to be held in Opole, Poland). These abstracts will be sent to JRA1 coordinators for acceptance and registration in proper time. The same refers to the whole papers to be delivered before the conferences listed above.

It has also been agreed that (within a frame of the collaboration between teams from IPJ and Tor-Vergata University) at least one full-length paper will be prepared for publication in a recognized scientific journal in 2005. A responsible co-author (R. Russo) will submit this paper for a preliminary review and registration soon.

Question of presentations at ELAN and CARE meetings will be discussed later on, when the time-schedule of these meetings is known.

Ad 4. During discussions of recommendations of the International Advisory Group particular attention was paid to suggestions concerning WP4. It was agreed that:

- The JRA1 collaboration will be enhanced by more meetings and visits in the laboratories involved in the realization of WP4 tasks (see point 2).
- The realization of particular tasks will be subject to regular analyses and appropriate changes in balancing resources and schedules will be proposed to the JRA1 coordinators.
- Good preparation of cooper cavities (to be coated at IPJ and Tor Vergata University) is necessary, and appropriate measures should be undertaken by the JRA1 coordinators to organize the manufacturing and preparation of such cavities. It has been agreed that at least several well-prepared cavities should be delivered to both laboratories in 2005.

- It is evident that the both laboratories engaged in the realization of WP4 cannot carry out cryogenic tests of the coated cavities. The proposed funding and schedule make also impossible to perform a great number of such tests in other laboratories. Therefore the JRA1 coordinators should look for other possibilities.
- A clear formulation of WP4 objectives can be found in the description of the whole project as well as in appendixes. Higher quality of superconducting coatings, as compared with that achieved with the sputtering technique, is expected. A considerable reduction of material costs is also possible.
- Full tests of the coated cavities will be planned and performed during later phases of the WP4 realization, when the UHV arc technology is mastered and the experimental facilities are optimized enough.
- Experience gained by CERN (during the mastering of the sputtering technique) will certainly be very helpful in further planning and running of the WP4 collaboration. An infrastructure of the CERN size is not available and it cannot be built within a frame of the present funding and schedule. Therefore, the CARE and ELAN coordinators are asked to help the JRA1 coordinators and WP4 task leaders to find a solution of this problem. This question should be discussed and solved during the CARE and ELAN meetings in 2005.

Ad 5. The modeling of magnetic filter systems, designed for the elimination of micro-droplets from UHV arc discharges, has been carried out at IPJ using a 2D approach. Results of computations performed for a planar cathode source and for a linear (cylindrical) cathode system have been presented and discussed. Several options of the magnetic channel for the planar-cathode system will be further analyzed. A chosen version will be manufactured and tested in both laboratories. Two different versions of the cylindrical magnetic filter (using elliptical tubes or solid rods), designed especially for the linear-cathode system, will be also considered and manufactured for laboratory testing according to the schedule proposed.