

BRIEF PRESENTATION OF THE FRENCH-GERMAN-RUSSIAN UNIVERSITY “WITH NO WALLS”

NETWORK N°2 "MODERN HIGH TEMPERATURE TECHNOLOGIES"

During the French-German-Russian summit in Bor in Mars 1998, the chiefs of states and governments decided to set up a university "with no walls" between France, Germany and Russia. Since July 2000 ENISE is the co-ordinator of Network Learning Research N°2 "Modern High Temperature Technologies" of the French-German-Russian University. Currently the Network includes 30 partners of three countries: 7 French, 9 German and 14 Russian partners, each country being represented by institutions recognised for scientific and teaching excellence (see in annexe the list of the partners).

The co-operation program aims two major objectives:

- scientific collaboration and the development of a joint research program;
- teaching of coherent and complementary courses in the academic institutions of the three countries; **development of a common European diploma** taught by the various partners establishments of the French-German-Russian University.

On the scientific and technical level, development of modern high temperature technologies requires a considerable R&D effort. Successful industrial applications of these technologies can be obtained only within the frame of European and international co-operation because of the complexity and the high prices of the equipment but also of the knowledge required. The established French-German-Russian Network answers this request for co-operation and exchange of competencies by bringing together scientists internationally recognised in the fields of the high temperature technologies applications. The joint research program must encourage the efforts of the several laboratories in their fields of excellence by supporting the common experiments, exchange of results, publications and joint presentations.

On the educational level, this program targets development of new teaching techniques based on information and communication by using the Multi-media and Internet. The first **interactive course** entitled “Laser Microtechnologies” was finalised in 2003. Within the Network a significant exchange of students, doctorates post-doctorates and professors is taking place. The main goal of these activities is the setting up of a **Master Diploma recognized in Europe**, key factor of the future success of the University "without walls".

PROPOSAL FOR MASTER DIPLOMA

On the base of the scientific and teaching competencies of Network N°2 of The French-German-Russian University, ENISE created an **international Master**, which will be also submitted to the European programme **Erasmus Mundus**. This programme is a co-operation and mobility programme in the field of higher education which promotes the European Union as a centre of excellence in learning around the world. It provides EU-funded scholarships for third-country nationals participating in these Masters Courses, as well as scholarships for EU-nationals studying in third-countries.

The proposed S&T Master, Mention "**Advanced Technologies for High Performance Systems (HPS)**" is supposed to form scientists capable to actively participate in development of the system meeting the needs expressed by the sector of highly productive machinery.

The proposed Master International is the diploma of higher specialised studies in Techniques. The courses will be given by professors as well as scientific collaborators of the institutes involved in the Network.

The first year of the Master is based on the 4th year courses taught at ENISE. On the second year students will be offered course in English grouped in 8 modules of which at least 4 are obligatory); a French foreign language module for the non French-speaking students and a module of scientific and technical English for the French-speaking students.

At the end of their studies students will develop a project with a laboratory of the Network or a company belonging to the partners club. To facilitate adaptation of the foreign students to the French education system and to help them to better prepare their projects, the partner company will assure the follow-up of one or several students during all the period of their stage France.

DEVELOPMENT OF THE CONCEPT OF THE PROJECT

Adhesion to the Process of Bologna

Development of the project French-German-Russian University goes in the direction of the new European concept of Education, that of the Process of Bologna. The Conference of Berlin (September 18-19, 2003), which gathered the ministers of 40 European countries, marked a significant stage in the Process of Bologna. The Conference underlined the need to include the doctoral formation in the Process. Russia, our partner in the project, decided to join the Process. It should be noted that it already exists a powerful instrument for integration of Russia in the European scientific area, namely the 6th PCRD. This is not completely the case for the education system. To reach the **compatibility of the education systems**, we consider necessary a progressive evolution of the virtual system of organisation and management of our project towards a real structure.

New forms of financing of the Project

- Calls for European projects

We are preparing actually several projects within the frameworks of **the 6th PCRD**, which will be submitted to the European Commission with the current of spring 2004. For example, the project entitled "Effect of Absolute Negative Conductivity in Photoplasma" is under development within the framework of the call **FP 6 2003 Nest-B-1** with the participation of the partners of the French-German-Russian University. The suggested research could have significant practical outcomes for telecommunications and satellite communications. The project is to be submitted on April 14, 2004.

- Proper funds of the institutions taking part in the project

Several partners are ready to discuss the different possibilities (non governmental) of funding of our Project.

Development of new forms of fellowships

To reinforce **the international mobility** of students, post-graduates and professors, we think to extend the already existent forms of fellowships to the following:

- Fellowship for 3 to 12 months for professors/scientists interested in coming to Europe for research and teaching activities;
- Fellowship for engineers/scientists having a Master Diploma and interested to validate their competencies by a European Diploma;
- Training courses for professors (reciprocal for Europe and Russia);
- Call for personal students fellowship (in 1st-3rd years);
- Business courses with partial financial participation of the student;
- Different forms of summer schools.

Organisation of international scientific workshops

In January 2004, the French-German-Russian University held in Moscow its **first international workshop** on the topic "Mathematical Models & Modelling in Laser Plasma Processes ", which brought together 28 participants representing four Russian, two French and one German partner institution. The Workshop was funded by MosGU, Russian partner of the project. Our future plans are to hold workshops annually, alternating year-to-year from Europe to Russia.

Participation of industrial partners

"Schneider Electric Industries" has 3 on-going contracts with the partners of the project (MEPhI, MosGU, and MGU). In 2002-2003, one of them was prolonged and one new signed. We think to develop this initiative by attracting other industrial partners, European as well as Russian, into the orbit of our project, which would provide us with additional sources of financing.

The French-German-Russian University is an international network for education and research, capable to meet the requirements of the European education and research policy. The eventual setting up of a Master Diploma recognized by all the members states of the consortium will open the way to the beneficial exploitation of all the potentials of our University "With No Walls".