

Russian regional scientists project proposals for participation in FP7

THEME 7: TRANSPORT (INCLUDING AERONAUTICS)

1. Dr. Victoriya Petrova

Coordinator of International Projects and Programs

Prof. Vitaly Baranchik

Construction and Road Machinery

Organization Name: Izhevsk State Technical University
E-mail address: victoria.petrova@istu.ru; sdm@istu.ru
Telephone: +7-3412-583875
Address: 7 Studencheskaya Str., 426069 Izhevsk, Russian Federation

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Are interested in participation in a project that will be prepared and submitted in the following topics:

GC.SST.2010.7-1. Electrical machines

GC.SST.2010.7-2. Integrated electric auxiliaries and on-board systems

Short description of the organization:

Izhevsk State Technical University (ISTU) was founded in 1952. Today over 20,000 students are getting education at its 12 faculties and 5 branches in other towns of the Udmurt Republic (UR) and neighboring regions, over 900 academic and scientific staff are reading lecturers and doing fundamental and applied research.

The research team of the Department of Construction and Road Machinery consisting of 2 Doctors of Science, Professors, 2 Candidates of Science, Associate Professors, 5 PhD students is experienced in physic and mathematical modeling of the processes of machine interaction with the environment, design of small-size machines for the maintenance of urban inner-block territories in winter time and equipment for producing nanoparticles from construction wastes. The trial samples of the equipment are available. The samples were awarded with the diplomas of I, II, III degrees at Russian contests and exhibitions of scientific works. The research team participated in grant contests of the Ministry of Education and Science RF in 2005-2009. Specialization: diminishing the power consumption of processes and increasing the ecological indexes of equipment.

Proposal/Expertise:

Based on the experience available the research team is ready to discuss all possible proposals on the implementation of joint projects aimed at the solution of the following problems and carrying out research in adjacent areas:

1. Creation of the range of communal machines with replaceable tools for winter and summer maintenance of sidewalks and inner-block territories with ecological class "Euro-4" with hybrid vehicle chassis based on internal combustion engines.
2. Creation of compact ecologically clean equipment for manufacturing nanopowders from the wastes of construction works and communal services.
3. Development of fundamentals for producing the equipment based on the application of limiting stressed state of anisotropic media.

Publications on the topic:

- ✓ A.E. Prichinin, V.A. Denisov. Structural model of a particle free impact against an obstacle / Problems of mechanics and material science: Proceedings of III Scientific-Practical Conference - Izhevsk: IAM UrD RAS, 2006. – P.71–72.
- ✓ V.P. Baranchik, V.A. Vasilyev. Power losses in automobile hybrid drive / Problems of mechanics and material science: Proceedings of III Scientific-Practical Conference - Izhevsk: IAM UrD RAS, 2006. – P.72–73.

<http://www.ric.vsu.ru>

- ✓ V.P. Baranchik, A.S. Tebenkova, D.N. Glavatskikh. Ecology and resource saving when maintaining inner-block urban territories / Problems of mechanics and material science: Proceedings of III Scientific-Practical Conference - Izhevsk: IAM UrD RAS, 2006. – P. 77–78.
- ✓ V.P. Baranchik, A.S. Subbotina. Ways of solving the problem of small mechanization in communal services / Interstroyneh – 2006: Proceedings of International Scientific-Practical Conference 19–22 September 2006. – M.: MSCU, 2006. – P. 277 –280.
- ✓ V.P. Baranchik, A.S. Subbotina, M.F. Zakirov. Equipment and resource saving techniques when maintaining inner-block urban territories / Materials, equipment and resource saving techniques: Proceedings of International Scientific-Technical Conference: in 3 vol. – Mogilev: Byelorussian-Russian University, 2007. – vol.2 – P. 5 – 6.
- ✓ M.F. Zakirov, A.S. Subbotina, V.P. Baranchik. Requirements to the equipment for maintaining sidewalks and yards in winter time / Interstroyneh – 2007: Proceedings of International Scientific-Technical Conference, 11 – 14 September, 2007, Samara / Samara State Architectural-Constructional University. – Samara, 2007. – P. 277 – 280.
- ✓ V.A. Denisov, O.P. Druzhakina. Energy saving problem in the technology of grinding natural and technogenic raw materials. / Journal “Non-Ferrous Metallurgy”, September 2007. – P. 5-12
- ✓ V.P. Baranchik, V.A. Vasilyev, M.F. Zakirov, A.S. Subbotina. Application of hybrid drive on self-propelled machines. / Mechatronics of construction and road machines: Proceedings of International Scientific-Practical Conference, 24 – 26 October, 2007, Kharkov, Ukraine / Kharkov National Automobile-Road University.
- ✓ V.A. Denisov. Energy saving universal mills. / Proceedings of Russian School on the Problems in Science and Technology at Acad. V.P. Makeev Rocket Center in Miass, November 2007. – P. 155.
- ✓ 10. V.P. Baranchik, A.S. Subbotina, M.F. Zakirov. Determination of snow resistance to cutting with the similarity theory. / Interstroyneh – 2008: Proceedings of International Scientific-Technical Conference, 16 – 19 September, 2008, Vladimir. 2 vol. / Vladimir State University, 2008. – vol. 1 – P. 265 – 268.

Description of previous and present experience in International Cooperation (max. 10 lines)

ISTU has 43 bilateral agreements with higher education institutions from Europe, the USA, Asia and Africa. ISTU is taking part in a consortium of TEMPUS-Tacis project JEP_ 26093_2005 “Communicative Approach in Teaching Languages (CATCH)”, period 01.09.2006 – 31.08.2009. In the cooperation with Leuphana University (Lueneburg, Germany) ISTU was taking part in Integrated Project “Re-engineering of natural stone production chain through knowledge based processes, eco-innovation and new organizational paradigms” (I-STONE) financially supported by European Commission (contract No NMP2-CT-2005-515762). Every year students and teachers of ISTU apply for individual scholarships to DAAD, IREX, etc. ISTU is a signatory of Magna Charta Universitatum in Bologna, Italy and a full member of European University Association (EUA). ISTU signed an agreement with ZEvA (Central agency on evaluation and accreditation), Hannover, Germany providing for evaluation and recognition of ISTU study programs in Germany and issuing internationally recognized diploma supplements.

Previous participation in EU’s Framework Programme project:

Re-engineering of natural stone production chain through knowledge based processes, eco-innovation and new organizational paradigms / I-STONE.