Dr. Ivan L. Ermolov
Associated Professor of
Robotics & Mechatronics Dept.
Founded in 1930, received university status in 1992
Six faculties
57 degree programmes
About 600 professors, about 7000 under- and postgraduate students
About 670 degrees award in 2004
Total funding from state and other sources: about 5 millions of Euro (2005)
• MSTU "STANKIN" was founded in 1930 and was presumed to prepare high-skilled specialists for Russian/ Soviet industry. The main activities of the university were concentrated around machinery and machine-tool building.

• Nowadays MSTU "STANKIN" outlined automated machinery and FMS as a main goal of it's research.
Faculties

- Mechanics and Control
- Information Technologies
- Technological
- Metrology and Informatics
- Economics
Mechanics and Control Faculty

- Robotics and Mechatronics Dept.
- Dept. of Plastic Deformation Systems
- Machine Tools Dept.
- Machine Design et al.
- Dept. of Computer Control Systems
Robotics and Mechatronics Department

- Head of Department: Prof. Jury V. Poduraev
- 3 Professors
- 8 Associated Professors
- 5 Assistants
- About 12 Ph.D. students
- About 50 students entering each year
- About 40 taking Bachelor Degree each year
- About 30 taking Dipl.-Engineer Degree each year
- About 5 taking Masters Degree each year
Equipment of Robotics and Mechatronics Dept.

- Classical and Modern Industrial Manipulators
- Commercial and prototype mobile robots
- Educational Mechatronics Sets
- Etc.
Links with National Industry

- ZIL Trucks Manufacturers
- AVTOVAZ Car Manufacturers
- TARIS Ltd. (Mobile robots)
- Technomatix Russia
- Servotechnica (Russia) / KEB (Germany)
- CAMOZZI Russia
Robotics and Mechatronics Department of MSTU “STANKIN” is one of the 3 departments among universities in Moscow which are giving degree in Robotics.
Robotics and Mechatronics Dept.

Basic R&D activities
Main Directions of RTD

- Industrial Manipulative Robots
- Mobile Robots for Technical and Research Application
- Mechatronics Technological Systems for Industrial Applications
International Partnership

- De Montfort University, UK
- Chemnitz Technical University, Germany
- Patras University, Greece
- Hong Kong University of Science and Technology, PRC
- Korea University of Technology and Education, Korea Republic
- University of Newcastle, UK
- Budapest University of Technology and Economics, Hungary

MSTU "STANKIN"
Robotics and Mechatronics Dept.
Recent International and National R&D Projects
Computer Control System for Large Scale Press Machines
( IWU, Chemnitz, Germany with MSTU "STANKIN" )
Optimization for redundant manipulators

Computer control and robot movement optimization for redundant manipulators
(MSTU "STANKIN" – Budapest Technical University)
Security Applications and Bombs Disposal

Mobile Robots for Security Applications and Bombs Disposal
(in collaborate with MSTU Bauman, Russia)

Main WPs by STANKIN:

- Navigation Conception of Mobile Robot
- Sensor Fusion
- Production of Navigation System
- System Testing and Trial Run
Mobile Robotics

Joint Projects between MSTU "STANKIN", De Montfort University (UK) and Taris Ltd. (Russia). Funding from Royal Society (UK).

Main WPs by STANKIN:

• Man-Machine interfaces improvement for Mobile Robot
• New Sensor System
• Design and production of Robot Prototype

MSTU "STANKIN"
Robotics and Mechatronics Dept.
Mobile Robot Prototype

IRIS-1

MSTU "STANKIN"
Robotics and Mechatronics Dept.
Controlling of IRIS-1 through the Internet

Remote operator workbench
Internet browser: Microsoft IE v. 4.0 or higher, Netscape Navigator v. 4.0 or higher

Internet

Server
Robot control program, CGI-module, LabVIEW G Web-server,

Data acquisition and I/O boards

Mobile robot
drives, sensors, CCD-camera

MSTU "STANKIN"
Robotics and Mechatronics Dept.
Mobile Robot Prototype

IRIS-2

MSTU "STANKIN"
Robotics and Mechatronics Dept.
Controlling of RTX-100 Robot through the Internet

MSTU "STANKIN"
Robotics and Mechatronics Dept.
Advanced Navigation System Based on FCM

Project: Development of Advanced Navigation System for Mobile Robots Based on Fuzzy Cognitive Maps

- Funded under Russian-Greek bilateral programme.
- Collaboration in creating a new navigation system based on Fuzzy Cognitive Maps technology.
• Synergy of state of art industrial equipment from Kuka, Schunk and Sick companies.
• Collaboration in educational, research and engineering activities.
• Test bed for new areas of industrial robotics.

MSTU "STANKIN"
Robotics and Mechatronics Dept.
EU FP6: HISMAR Project

- HISMAR – Hull Identification System for Marine Autonomous Robotics
- Targeted to create a robot for cleaning of fouling of hull of ships.
- STANKIN role: design of components and navigation algorithms, testing of prototype, dissemination activities.
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Thank you!