

Cooperation with Universities in Russia

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History of the Cooperation

- Start of our cooperation with NSTU in 2000 by a visit of the former Rector Prof. Walenta
- Establishing of a MoU concerning a cooperation in Mechatronics
- First working visit of Siegen professors in 2001
- Since that time several visits of professors in Siegen and in Novosibirsk
- PhD candidate was on a research visit in Siegen

Scientific Cooperation Possibilities

- Exchange of students in both directions preferably in master programmes with emphasis in Mechatronics and Automation
- Because both universities are accepting the Bologna principles the exchange can result in joint degrees
- Participation of both universities in Tempus and Erasmus Programmes

Scientific Cooperation Possibilities

- Application for joint research projects (e.g. DFG on German side and RFBR on Russian side)
- Joint supervision of PhD candidates (Grishina Nadezda).
- Participation in summer schools at NSTU in Altai mountains for students and PhD candidates

Research Experience in Germany.

Next 3 slides are an experience of Nadezhda Grishina

How to start?

To realize my plans for studying in Germany I needed only two steps:

- Find a German supervisor
 - “I chose the University of Siegen and namely Professor Hubert Roth because it was the best place, where I could check the results of my previous scientific work and review researches in related fields.”
- Make an application
 - “My research was supported by DAAD together with the Ministry of Education and Science of the Russian Federation.”

Advantages of Research in Germany

- Excellent research opportunities
 - “I had at least 2 different devices for testing developed algorithms, which allows me to implement algorithms and then to recognize how to improve it.”
- International academic community
 - “In the institute for Automatic Control Engineering I worked with high qualified colleagues from all over the world.”
- Improve your knowledge of English and German
 - “Everyday I had live contact with colleagues beside my German and English courses in University.”
- You are in the heart of Europe
 - “During my winter vacations I had a great opportunity to travel around Europe. You need only a few time to reach the Netherlands, Belgium or even Swiss from Siegen.”

Result of German experience

- Joint PhD program
 - “The main result of my work was an invitation from Professor Hubert Roth to develop a further joint PhD program, which implies German and Russian supervision of the research project.

As a result I plan to defend thesis in both
Universities.”

Joint Summer Schools with East Partners

- "Wireless Networks" Odessa, Ukraine
- Held from 27.06.2011 – 08.07.2011
- Targets of the summer school:
 - Educate the participants about the latest developments,
 - different scientific approaches and
 - networking between research and industrial application.
 - To make the research field "Wireless Networks" more popular for the participants

"Wireless Networks" Odessa, Ukraine

- Topics of the summer school:
 - Quality in cellular IP Network using evolutionary techniques
 - Wireless Network environment
 - Wireless local area networks
 - Development of wireless applications
 - Wireless network basic concepts
 - Wireless network routing
 - Wireless network physical layer optimization
 - LTE (Long Term Evolution) security
 - Wireless network space localization
 - Wireless network physical layer protocols
 - Trends in "Wireless Networks"

"Wireless Networks"

Odessa, Ukraine

- Additional lectures on special topics:
 - Modeling of radio frequency communication channels using Volterra model
 - Wireless network in SIEMENS control systems
 - Wireless Sensor network: an overview
 - Person detection application in a sensor network
 - Communication in wireless underground Sensor networks

"Wireless Networks" Odessa, Ukraine

- Lecturers from the University of Siegen, the Odessa National Polytechnic University and the Ternopil National Economic University
- Social events:
 - Opening ceremony of the summer school
 - Excursions:
 - Visiting fortress Akkerman, Bilhorod-Dnistrovskyj
 - Visiting a vineyard, Shabo
 - Guided city tour in Odessa
 - Closing ceremony of the summer school

"Network Control in Mechatronics Systems" Novosibirsk, Russland

- Originally planned for July 2013
- Targets of the summer school:
 - Educate the participants
 - about latest developments and scientific approaches,
 - the connection between research and industrial applications
 - on the field of "Network Control in Mechatronics Systems"
 - While the focus of the summer school "Wireless Networks" was on the basic technologies, now the focus is on the use of these technologies

Proposal for a Summer School in Novosibirsk, "Network Control in Mechatronics Systems"

- Planned lectures:
 - Modern automatic control methods for electric drives of mechatronic systems
 - The problem of synthesis in automation theory: Method of motion separation
 - Simulation and optimization of closed-loop dynamic systems by multiple criteria
 - Numerical optimization of controllers for multiply nonlinear and transcendental objects
 - The new structure of effective controllers and its numerical optimization
 - Mechatronic systems for electric energy generation
 - Telematic Applications
 - Electronic control systems for laser radiation

"Network Control in Mechatronics Systems" Novosibirsk, Russland

- Lecturers from the University of Siegen and the Novosibirsk State Technical Univeristy
- Unfortunately it was not accepted!!!!

Let us try again!