AGH University of Science and Technology, KRAKOW, POLAND
UNESCO CHAIR FOR SCIENCE, TECHNOLOGY AND ENGINEERING
EDUCATION AT THE AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY
KRAKOW, POLAND
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UNESCO AGH Fellowships ed. 2012-B in Engineering
Project Proposal for 6 months

Naukowa oferta stypendialna UNESCO - AGH 2012 B dla młodych naukowców z krajów rozwijających

UNESCO - AGH 2012 Project B: promoting human resource capacities in the developing countries through intensive training and to enhancing international understanding and friendship among peoples of the world and the people of Poland

(In English only)

1. Project title: Development of control system parallel manipulator based of Assur group of high class
Field of research: Mechanics, Theory of Machines and Mechanisms
Number of fellowships with free tuition sponsored by UNESCO: 1 (one).....

2. Name of institution: AGH University of Science and Technology,
Faculty of Mechanical Engineering and Robotics, Department of Robotics and Mechatronics ..
.....
Full address: A. Mickiewicza Av. 30, PL 30-059 Krakow, Poland

3. Name and Surname, title and full contact data of project supervisor:
Jacek Cieślik, dr hab. inż., prof. AGH.....
Tel.: +48 12 617 36-63.....
Fax: +48 12 .617 35-05.....
E-mail cieslik@agh.edu.p.....
WWW .....

4. Project duration: 6 months
Proposed starting date: 1.10. 2012 (exact date to be agreed upon by the selected fellows and host Institution)
Language: English
Scientific contents: *individual research programme under supervision of tutor* (see page p.8)

5. Developing countries (specification): *UNESCO Member States - please specify countries or region (Asia, Africa, Latin America, Caribbean and Pacific)*
Asia, Kazakhstan.....

6. Academic requirements: Candidates should have a B.Sc. or M.Sc. degree,
please specify in more details : Candidate should have an experience in theoretical mechanics, theory of machines and mechanisms, mathematical analysis.....

7. Qualifications required:
be proficient in reading and writing in English and Russian
be not more than 35 years of age; and be in good health, both physically and mentally;
others: general knowledge in mechanics, physics of solid bodies, mathematical analysis

8. Project description (in English):

The purpose of work: development of function and application of management of spatial parallel manipulator package on the base of group of Assura of fourth class with six degrees of freedom by decision of tasks of the dynamic planning and experimental design.

Tasks:

- Kinematics synthesis and analysis, decision of reverse task of kinematics of spatial parallel manipulator on the base of group of Assura of fourth class with six DOF.
- Dynamic analysis and synthesis of spatial parallel manipulator on the base of group of Assura of fourth class with six degrees of freedom.
- Development of operating model of parallel manipulator on the base of group of Assura of fourth class with six degrees of freedom.
- Development of function of programmatic management of parallel manipulator on the base of group of Assura of fourth class with six degrees of freedom.
- Development of application of management a parallel manipulator package.
- Leadthrough of imitation experimental design of parallel manipulator on PEVM and by the model of manipulator.

The novelty of work is to obtain:

- Method of kinematics and dynamic synthesis of spatial parallel manipulator on the base of mechanisms of high class.
- Method of synthesis of function management a spatial manipulator on a base MVK.
- Application of spatial parallel manipulator package on the base of mechanisms of

9. Other information:

Stamp of the AGH UST Faculty

Project Supervisor
(signature)

Place and date: Krakow, 08.02.2012

Dean of the Faculty
(signature and stamp)

Prof.dr hab. inż. Janusz Kowal