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Annex 01
List of projects proposal,
UNESCO/ Poland Co-sponsored Fellowship Programme in Engineering
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With a view to promoting human resource capacities in the developing countries and to enhancing international understanding and friendship among nations and the people of Poland, the Polish National Commission for UNESCO and the UNESCO Chair for Science, Technology and Engineering at the AGH University of Science and Technology in Krakow are placing at the disposal of UNESCO thirty five (35) fellowships in English language only of six (6) months duration starting on 1st October 2016 for the benefit of Member States listed in Annex 02 and Annex 03. Beneficiaries of these fellowships will be given the opportunity to undertake an individual research programme under supervision of tutor in the field of the Science, Technology and Engineering.

ID 2016A 01 AGH PL. Drilling Engineering (Field of research). Drilling and Hydraulic Fracturing (Project title). Academic requirements: Candidates should have a B. Sc. or M.Sc. degree, preferably in petroleum, earth engineering, physics, mathematics or computer science. Qualifications required: be proficient in reading and writing in English; be not more than 40 years of age; and be in good health, both physically and mentally; be able to solve problems using mathematical methods. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 02 AGH PL. Geophysics or Physics (Field of research). Study of radionuclides and rare elements deposits (Project title). Academic requirements: Candidates should have a B.Sc. degree, good English and principle knowledge about rare and radioactive deposits, prefer for candidate with solid and water samples collected from deposits in his country. Qualifications required: be proficient in reading and writing in English; be not more than 35 years of age; and be in good health, both physically and mentally; general knowledge in geochemistry, nuclear geology and physics. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia and Africa); Number of fellowships with free tuition sponsored by UNESCO: 1

ID 2016A 03 AGH PL. Decision Engineering (Field of research). Problem base engineering (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree. Qualifications required: be proficient in reading and writing in English; be not more than 40 years of age; and be in good health, both physically and mentally; be able to use MS Office and drawing programs, have a general knowledge related to engineering problems. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 04 AGH PL. Automation in Mining Devices (Field of research). Mining devices automation (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree, automation in mining devices. Qualifications required: be proficient in reading and writing in English; be not more than 40 years of age; and be in good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 4.

ID 2016A 05 AGH PL. Mining Devices (Field of research). Selected problems in operation of mining devices (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. in engineering; Mining Devices. Qualifications required: be proficient in reading and writing in English; be not more than 40 years of age; and be in good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 4.

ID 2016A 06 AGH PL. Transport Engineering (Field of research). Availability problems in transportation systems and devices (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc.. Qualifications required: be proficient in reading and writing in English; be not more than 40 years of age; and be in good health, both physically and mentally; be able to write computer programs for example or be familiar with CAD/ CAM/ CAE programs, have a general knowledge related to transportation problems, including safety and reliability problems. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 07 AGH PL. Transport Engineering (Field of research). Transport System Telematics (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc.; Candidates should have mechanical/ transport engineering/ automation degree. Qualifications required: be proficient in reading and writing in English; be familiar with transport system telematics, be able to analysis of reliability, maintainability and availability of machine maintenance, as well Modeling; be not more than 40 years of age; and be in good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 08 AGH PL. Manufacturing Transport Engineering (Field of research). Transportation technology system and devices (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc.; Qualifications required: be proficient in reading and writing in English; be not more than 40 years of age; and be in good health, both physically and mentally; be able to write computer programs for example or be familiar with CAD/ CAM/ CAE programs, have a general knowledge related to transportation problems, including safety and reliability problems. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 2

ID 2016A 09 AGH PL. Sensor Engineering (Field of research). Inter-digital Piezoelectric transducers in Structural Health Monitoring (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree; the candidate should have both a B.Sc. an M.Sc. degree. Qualifications required: be proficient in reading and writing in English; be not more than 30 years of age; and be in good health, both physically and mentally; experience in the field of piezoelectric transducers. General knowledge in ultrasound, sensor engineering, signal processing. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 1.

ID 2016A 10 AGH PL. Economic sociology and economics (Field of research). Interrelations between new technologies and social and economic life in globalizing world (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in humanities or social sciences or economics. Qualifications required: be proficient in reading and writing in English; be not more than 35 years of age; and be in good health, both physically and mentally; general knowledge in world economics. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 1.

ID 2016A 11 AGH PL. Foundry Engineering (Field of research). Ecological assessment of the polymer binder in the form: copolymer of maleinic acid/ modified polysaccharide (Project title). Academic requirements: Candidates should have a B.Sc. degree. Qualifications required: be proficient in reading and writing in English; candidate was previously a scholarship in another program, be not more than 25 years of age; be in good health, both physically and mentally; general knowledge in chemistry of polymers engineering, environmental fin oundry engineering, harmful substances. Project duration: 6

months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Europe, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 1.

ID 2016A 12 AGH PL. Foundry Engineering (Field of research). Influence of cerium on the morphology of non metallic inclusion in microralloyed steel (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree. Qualifications required: be proficient in reading and writing in English; be not more than 40 years of age; and be in good health, both physically and mentally; general knowledge in steel metallurgy materials engineering, physics and mathematics. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Europe); Number of fellowships with free tuition sponsored by UNESCO: 1.

ID 2016A 13 AGH PL. Foundry Engineering . (Field of research) Evolution of chemical composition of non-metallic precipitates generated in the process of de-oxidization and modification of lanthanum steel (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree. Qualifications required: be proficient in reading and writing in English; be not more than 40 years of age; and be in good health, both physically and mentally; general knowledge in steel metallurgy materials engineering, physics and mathematics. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Europe); Number of fellowships with free tuition sponsored by UNESCO: 1.

ID 2016A 14 AGH PL. Foundry Engineering (Field of research). Influence of the neodymium on the morphology of non-metallic inclusion in steel (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree. Qualifications required: be proficient in reading and writing in English; be not more than 40 years of age; and be in good health, both physically and mentally; general knowledge in steel metallurgy materials engineering, physics and mathematics. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Europe); Number of fellowships with free tuition sponsored by UNESCO: 1.

ID 2016A 15 AGH PL. Geology (Field of research). Geological characteristic of tin deposit in Africa (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree.; basic knowledge on mineral deposits. Qualifications required: be proficient in reading and writing in English; be not more than 30 years of age; and be in good health, both physically and mentally; general knowledge in geology and optical mineralogy. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Africa, Asia); Number of fellowships with free tuition sponsored by UNESCO: 4.

ID 2016A 16 AGH PL. Computer Vision (Field of research). Research in Computer Vision and Cognitive Robotics (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree.; very good background in mathematics, interests in computer science, and particulary in computer vision and robotics. Qualifications required: be proficient in reading and writing in English; be not more than 25 years of age; and be in good health, both physically and mentally; general knowledge of programming in C/C++, Matlab or Python. Basic knowledge of image processing and analysis techniques. Stroug backgroumd in mathematics, particularly in linear algebra. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 17 AGH PL. Materials science (Field of research). Advanced Ceramic Materials – synthesis, properties and possible applications (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in material science or chemistry. Qualifications required: be proficient in reading and writing in English; be not more than 30 years of age; and be in good health, both physically and mentally; general knowledge in material science (especially in ceramic technology of porous materials); ability to work in a group, good communication skills; ideally candidates will be highly motivated, innovative with some experimental and process development skills and an open minded approach to new ideas and concepts. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 18 AGH PL. Materials science (Field of research). Granular metals – fabrication, characterization and modeling (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in chemistry, physics or material engineering. Qualifications required: have a general knowledge in chemistry and physics; be fluent in reading and writing in English; be able to work in group and have good communication skills; be not more than 30 years of age; and be in good health. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 19 AGH PL. Materials science (Field of research). Electrochemically Engineered Materials – synthesis, properties and possible applications (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in chemistry or material engineering. Qualifications required: general knowledge in chemistry (especially in electrochemical method of obtaining nanostructured materials); be proficient in reading and writing in English; be not more than 30 years of age; ability to work in group, good communication skills; and be in good health, both physically and mentally; Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 20 AGH PL. Nanotechnology (Field of research). MoS2 based thin films for solar energy conversion (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in Physics, Chemistry or Material Engineering. Qualifications required: general knowledge in the field of thin films, solid state physics and chemistry, methods of thin films elaboration; scientific approach to the problem; be proficient in reading and writing in English; ability to work in group and good communication skills; be not more than 30 years of age; and be in good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 1.

ID 2016A 21 AGH PL. Composite materials (Field of research). Local in situ composite reinforcements in ferrous castings for abrasive wear resistance enhancement (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in Materials Science/ Materials Engineering/ Metallurgy or similar. Qualifications required: fluent in written and spoken English; general knowledge in materials investigation techniques (e.g. x-ray diffraction, electron microscopy); be not more than 40 years of age; and be in good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 1.

ID 2016A 022 AGH PL. Computer vision (Field of research). Embedded implementation of selected vision algorithms using heterogenous Zynq SoC (System on Chip) devices (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree, background in: computer science (mainly programming in C/C++/ Python/ Matlab/ Open CV and general algorithms), basic skills in computer vision, embedded systems (ARM processor programming and Linux OS) and FPGA devices (e.g. VHDL or Verilog, Xilinx FPGA devices, Xilinx Zynq devices, Xilinx tools like ISE, Vivado, SDK). Only the computer science is mandatory, however others will greatly help finishing the project (no additional time for studying this subjects will be required). Qualifications required: be proficient in reading and writing in English; general knowledge in computer science (programming, Linux OS), computer vision, embedded systems and FGPA devices; be not more than 30 years of age; and be in good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 23 AGH PL. Geology and Mining (Field of research). Analysis of use geothermal waters for energetical purposes (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree, engineering background in the one of the field: mining and geology, heat transfer, civil engineering. Qualifications required: be proficient in reading and writing in English; be not more than 40. years of age; and be good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Asia, Africa, Latin America); Number of fellowships with free tuition sponsored by UNESCO: 1.

ID 2016A 24 AGH PL. Gas Engineering (Field of research). Design of compressed air energy storages in salt caverns (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in petroleum engineering, geoscience, gas engineering or mechanical engineering; Candidates requirements: be proficient in reading and writing in English, be not more than 35 years of age and be in good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 1.10. 2016. Language: English. UNESCO Member States (Africa, Asia, Latin America, Caribbean and Pacific); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 25 AGH PL. Gas Engineering (Field of research). Reservoir fluid recombination in conventional and unconventional gas-condensate wells (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in petroleum engineering, geoscience, gas engineering or mechanical engineering; Candidates requirements: be proficient in reading and writing in English, be not more than 35 years of age and be in good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 1.10. 2016. Language: English. UNESCO Member States (Africa, Asia, Latin America, Caribbean and Pacific); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 26 AGH PL. Geoturism (Field of research). Selected geological objects and their geotouristics values (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in geology, geophysics and environmental protection; Candidates requirements: be proficient in reading and writing in English, be not more than 40 years of age and be in good health, both physically and mentally, general knowledge in Geotourism. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Africa, Asia, Latin America, Caribbean and Pacific); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 27 AGH PL. Gas Engineering (Field of research). Optimization of the gas-condensate reservoir exploitation in the recovery of ethane and LPG (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in petroleum engineering, geoscience, gas engineering or mechanical engineering; Candidates requirements: be proficient in reading and writing in English, be not more than 35 years of age and be in good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 1.10. 2016. Language: English. UNESCO Member States (Africa, Asia, Latin America, Caribbean and Pacific); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 28 AGH PL. Gas Engineering (Field of research). Nodal analysis for unconventional tight gas reservoirs (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree in petroleum engineering, geoscience, gas engineering or mechanical engineering; Candidates requirements: be proficient in reading and writing in English, be not more than 35 years of age and be in good health, both physically and mentally. Project duration: 6 months. Proposed starting date: 1.10. 2016. Language: English. UNESCO Member States (Africa, Asia, Latin America, Caribbean and Pacific); Number of fellowships with free tuition sponsored by UNESCO: 2.

ID 2016A 29 AGH PL. Geology (Field of research). Geological characteristic of chromite deposit in Balkan (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree, basic knowledge on mineral deposits. Qualifications required: be proficient in reading and writing in English; be not more than 30 years of age; and be in good health, both physically and mentally; general knowledge in geology is required; knowledge in optical mineralogy is welcome. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Africa, Asia, Europe); Number of fellowships with free tuition sponsored by UNESCO: 1.

ID 2016A 30 AGH PL. Geology (Field of research). Geological characteristic of metallic deposit in Balkan (Project title). Academic requirements: Candidates should have a B.Sc. or M.Sc. degree, basic knowledge on mineral deposits. Qualifications required: be proficient in reading and writing in English; be not more than 35 years of age; and be in good health, both physically and mentally; general knowledge in geology is required; knowledge in optical mineralogy is welcome. Project duration: 6 months. Proposed starting date: 01.10.2016. Language: English. UNESCO Member States (Africa, Asia, Europe); Number of fellowships with free tuition sponsored by UNESCO: 1.