

Self-evaluation Report
about completing a short-term research visit to
International Academy of Management and Technology «INTAMT»
by Olga Fedorova

1. hosting country: The Federal Republic of Germany
2. city/town: Dusseldorf
3. Dates of staying from 06.05.2013 till 29.06.2013
4. Visit details:

The organizer of the training program was the International Academy of Management and Technology (INTAMT).

Purpose of the trip: Research on best European practices in the field of metallurgy and metal forming

Tasks trip:

- training, consultation, exchange of experience, getting practical skills with the equipment, computer programs in the departments and laboratories of universities, research centers in Germany;
- familiarity with advanced technologies for the production of metallurgical enterprises;
- collecting material for the expansion of the literary review and writing sections of the experimental parts Master's dissertation;
- enhance the scientific, educational and cultural horizons expansion;
- acquisition of the learning experience and interaction with experts in the English language;
- establishing personal contacts with foreign experts in the field of metal forming;
- consultations with leading university teachers on the subject of research master's thesis, such as.

5. Initial plan of visit:

- Receive training in the departments and laboratories of leading universities, as well as familiarity with advanced technologies in metallurgy and machine-building enterprises in Germany;

- Learning new computer programs, methods of operations research metal forming equipment for studying the structure and properties of metals and alloys for writing a master's thesis.

6. Results of visit

6.1. During the internship the following modules have been studied .

The module number 1 : "The organization , methods and content of training and skills development program" Metal Forming " at the University of Duisburg- Essen .

The module number 2 . " Computer-aided design tools and tooling for metal forming processes . Software for 3D - modeling " at the University of Duisburg- Essen .

The module number 3 " Combined treatments of nonferrous metals and alloys" at the University of Aachen.

Module number 4 "Innovative methods of metal forming " at the University of Aachen.

The module number 5 . " Introduction to the wire- pressing- drawing production " at the metallurgical plant of Duisburg .

The module number 6. " Getting Acquainted with the production company SMS MEER, specializing in the manufacture of equipment for metal forming .

The module number 7. "The organization , methods and content of training programs for specialists in the field of" Technology of production of jewelry "and" Technology artistic treatment of metals . " Familiarization with the production of jewelry. Professional College of Essen .

The module number 8. " Introduction to the exhibition display jewelry " in museums and exhibitions of various cities in Germany .

6.3 . Taken part in the mathematical treatment of an array of data obtained from test results in the deformation of metallic materials in a state of superplasticity using the computer program ANSYS.

6.4. A search and analysis of scientific literature to extend a literal view of a thesis.

6.5. Taken part in projects of research work carried out by masters and doctors of the Technical University of Clausthal .

6.6. Received practical skills metallographic equipment to determine the structure and properties of metallic materials.

7. Evaluation of the visit efficiency (*give a paragraph description about each of the following points*)

International Academy of Management and Technology (INTAMT) - developer and organizer of the training program from Germany. At the Academy INTAMT, apart from German workers , highly skilled professionals with significant luggage vigorous activity in the CIS countries and the European Union , allowing the Academy to successfully implement communication between specialists from different countries .

Designed Academy internship program is almost fully compatible with the instructions issued and held in the highest degree of efficiency.

Düsseldorf University of Applied Sciences (Fachhochschule Duesseldorf)

The university is one of the largest in the German federal state of North Rhine- Westphalia and offers training in integrated and interdisciplinary courses . The university offers networking training and research in the fields of design, technology , social sector and information technology. Particular attention is paid to : engineering, process design, media, social and cultural sciences and business studies .

The university passed internship in the workplace to explore the software that is used in the educational process and scientific research . The job was done on the modeling and design of the stress - strain state of the metal sample subjected to tensile loading on different paths , studied the program LS Dyna, its interface and practical possibilities .

University of Duisburg- Essen (Universitat Duisburg-Essen)

Included in the University Alliance UAMR (Bochum , Dortmund , Duisburg- Essen) . The University includes Institute of Metallurgy and Metal Forming , which was an intern .

Wieland Group

Is one of the world leaders in production of blanks and special products in copper and copper alloys. The company manufactures copper tubes , strips , sheets , rods, finned tube heat exchangers and . Wieland products used as components for the production of a variety of industries. During familiarization with the equipment and technology of plate rolling discussed such technological and scientific aspects as : types of equipment used for rolling , heat treatment is , roll tool design features , the composition of grease used , the simulation of the rolling process on a computer , etc.

The Rhenish - Westphalian Technical University of Aachen (Rheinisch-Westfälische Technische Hochschule Aachen)

Higher education institution in Aachen , Germany. RWTH technical university is a TOR 9 (Association of the nine best technical universities in Germany), IDEA League (Association of the top five universities in Europe), and the Association of Top Industrial Managers for Europe.

At the University of the full sets of the laboratory 's metal . It was conducted familiarization with the equipment of laboratories , both reeling mill to produce bands of steel; complex rolling equipment , equipped with strain gauge , measuring and other equipment with a display of process parameters on the computer display ,

Hydraulic press for hot forging steel forgings , etc.

Research laboratory equipment used in the processing of metals in the Rhine- Westphalian Technical University of Aachen (Werkzeugmaschinenlabor WZL, Rheinisch-Westfälische Technische Hochschule Aachen)

Laboratory equipment Aachen University is known around the world and is a leader in research and innovation in the field of production technology. In particular, the laboratory is engaged in the calculation and production of equipment and their parts and components , metrological examination and evaluation of manufacturing systems , process monitoring and diagnostic equipment, the principles of human-machine interaction , control and automation , etc.

Clausthal University of Technology (Technische Universität Clausthal)

Key areas to be studied at university - this production, processing and preservation of resources such as materials , energy and information . The Institute of Metallurgy conducted research on molding and metal forming . In particular, studying the processes of stamping steel parts with coatings , drawing copper pipes , sheet rolling , etc.

This practice site meets all the requirements of the training program on the study of metal forming processes .

Professional College of Essen (Berufskolleg der Stadt Essen Ost) All the departments have well-equipped laboratories and workshops . Training was conducted in the laboratories of jewelry manufacturing with the acquisition of practical skills .

Foundry Institute , Duesseldorf (Institut für Gießerei)

Is one of the leading research and educational institutions in the world in the field of foundry technologies . The main objectives of the research institute are research projects in the field of metallurgy , crystallization , foundry materials , the casting process and applied problems of casting technology for the production of preforms used in metal forming processes .

Iron Works of SMS in Mönchengladbach

Division SMS Meer in Mönchengladbach is the leader of metallurgical machinery for the production of long-length steel products , such as the production of equipment for pipes, rolled , non-ferrous metals and heating equipment. In its program, the production of press and forging equipment SMS Meer offers innovative production methods. SMS Meer also manufactures automated forging and pressing equipment . Extensive experience in the field of technology and materials accumulated over decades , forms the basis for the technological systems that control the forging equipment, and hydraulic presses , stamping presses, plate rolling and rolling mills , etc.

Steel mill CD Walzholz

Managed by a family dynasty for 150 years. Specializes in the production of cold-rolled sheets, strips and strips of various steel grades . Production company: aerospace parts , garden tools , edging skis (company holds about 60 % of the world market of the product) , the details of household appliances and road transport , automotive (70 % of the products manufactured by companies involved in the industry) , as well as details of wind power plants .

Were acquainted with the technology of production of steel sheets , which are made from various grades of steel . A demonstration of the mill Quarto , equipped with two winders , rolling sheet material with a thickness of 1 mm . Held visiting lines cutting and packaging of finished products as well as automated warehouse for storage.

Nizhnereynsky University of Applied Sciences in Krefeld (Hochschule Niederrhein Krefeld)

The university is one of the largest universities of applied sciences in Germany , has a good national and international reputation .

During the program, were shown the possibility of using for metal forming processes several computer programs , demonstrate the operation of a 3-D printer and a unique milling machine equipped

with a robot with five degrees of freedom. In particular, it was gleaned that a computer-controlled machine can be used for the manufacture of tools used for metal forming .

G.Zigena University (Universitat Siegen)

University of Siegen consistent with the concept of the modern institution of higher education : it provides a high level of education, contributes to the fundamental and applied research and is a center of creative development and training of qualified personnel

8. Percentage of completing the initial plan of visit

The original plan of training is made in full. Also visit was organized to further metallurgical plant of SMS.

9. How much the visit contributed to your future professional/research activities?

During the program, the results of learning new computer programs were developed computer models of the process of combined methods of processing of aluminum alloys, paper prepared for the press in the journal "Bulletin of the Magnitogorsk Technical University", which is included in the list of journals WAC and sent the thesis to participate in the annual international science and technology conference of Young Scientists in Ekaterinburg, written two sections of a thesis.

10. List of documents confirming your successful completion of the research visit (*should be attached*)

According to the results of training received a certificate of participation in the seminar "Study of the best European practices in the field of metallurgy and metal forming", a copy of which is attached.

11. Overall evaluation of the visit

11.1 . Internship allowed to meet with new technologies, equipment, tools and software equipment for metal forming .

11.2 . Obtained skills laboratory equipment for metal forming and acquired experience with the software ANSYS, LS Dyna.

11.3. We studied the system of organization of education in Germany, in particular , in teaching students in the steel profile.

11.4. Were established personal contacts with experts in the field of metal forming .

11.5 . Performed an analysis of international quality standards and compliance with domestic products.

11.6. Studied metallurgical methods for evaluating the quality of products on the instruments of companies Carl Zeiss, Zwick

12. What changes would you have made if you were preparing for the next visit of a similar kind?

In preparation for the internship would be necessary to conduct a more detailed preliminary study of each of the visited organizations and attempt to establish preliminary contacts with experts in the relevant profile and reduce the number of participants in training for a full immersion language I.

Date of report

Signature