



**UNIVERSITY OF SOFIA
"ST. KLIMENT OHRIDSKY"**

Faculty of Chemistry

**ACTION PLAN
For strengthening the research capacity
of the Faculty**

2010 – 2017

Vision

The Faculty of Chemistry – the top level research and research-based high education institution in Chemistry in Bulgaria (and among the leading such institutions in the Eastern Europe), with international recognition of its scientific and educational achievements and promoting the technological development of knowledge-based economy in the country.

Foreword

The Faculty of Chemistry at University of Sofia “St. Kl. Ohridski” is the oldest (120 years old) and leading research and educational centre in the field of chemistry in Bulgaria. For the country it is a unique institution covering, to a high extent, all branches of the modern chemistry. About 800 students are trained in the Faculty on a bachelor, master and PhD level. The Faculty of Chemistry has traditional collaborations with scientific centers in Europe, USA and Japan, where the major part of the researchers have specialized. Nine lecturers have been Alexander von Humboldt scholarship holders and among them two are Humboldt award winners. The scientists of the Faculty publish more than 200 papers yearly in renowned specialized journals. The high quality of the research is also evidenced by the H factor (48) of the Faculty and high number of invited lecturers at international conferences.

These traditional achievements and the present research and educational potential of the Faculty highlight the two-fold *Mission of the Faculty* during the transition towards knowledge-based economy in Bulgaria:

- **Education and training of highly qualified specialists (Bachelors, Masters, Doctors) in Chemistry and related interdisciplinary fields with strong scientific background and creative thinking that are able to apply advanced methods and equipment and to develop new approaches and technologies in chemistry, material science, pharmacy, environmental protection, food industry, etc.**
- **Fundamental and applied research activities at internationally recognized level that will allow keeping and developing the expertise of the Faculty and the country in various active and emerging research and technological fields related to Chemistry, increasing the respect in the international community towards the research achievements in Bulgaria, and providing scientific base for transfer of knowledge and fast innovation of knowledge-oriented industry, which is expected to increase the efficiency of labor and the competitiveness of our economy.**

Both components of the *Mission* are particularly important during the envisaged period due to huge delay of Bulgarian economy in absorbance of the advanced technological developments compared to most of the other countries in the EU. Although this Action plan is primarily oriented towards strengthening the research capacity, its accomplishment will also have strong impact on the educational Mission of the Faculty in various ways – close connection of the education with modern science, highly quality teaching staff, access to modern equipment,

good international contacts, good prospects for students to find jobs in knowledge-oriented industry, etc.

The present Action plan was developed within the frame of activities included in the project EVEREST: “*Evaluation of the research quality and capability of the Faculty of Chemistry, University of Sofia, and defining of an action plan*”, supported by the *Capacity* program of FP7 of European Union. It is based on the “*Evaluation Report and SWOT Analysis*” of experts-evaluators nominated by the EC RTD-B.4 unit.

Strategic Priority 1: Improving the research strategy and organization

The main activities of the Faculty of Chemistry are

- **fundamental and applied research,**
- **research-based teaching,**
- **research training** in order to bring forth new knowledge and increase capacity for innovations.

Thus strengthening the **research capacity** of the Faculty is vital for its future development.

Strategic Goal 1.1. Defining of priority research areas (deadline 2011)

Research in a University must primarily be planned and accomplished according to the **bottom-up principle** as initiative of the individual scientists/research groups. On the other hand, the national and international funding agencies direct the research activities in selected priority areas by specific calls, and in this way influence the initiative of the researchers. Although the Faculty itself does not distribute substantial research funds, in order to streamline the activities of the research groups several strategic/priority research areas will be selected in agreement with the individual departments (**top-down principle**). Concentration of manpower, scientific infrastructure and resources in strategic research areas is supposed to play essential role for strengthening the research capacity of the Faculty.

Actions:

- The Faculty will promote research activities in these priority areas by:
 - Preparation of general project for development of the Faculty in one or more of these areas (for FP7, NSFB, structural funds, and other funding sources),
 - Incorporation of these research areas in the research strategy of the University of Sofia,
 - Organization of joint events according to the research groups working in these fields.
- The following four socially related research directions of the Faculty are suggested as priority areas (consistent with the national and the EU research priorities):
 - Chemistry of functional and nanomaterials,
 - Health, food, and daily-life chemistry,
 - Environmental chemistry and protection,
 - Efficient and safe chemical processes and technologies,
 - Chemistry for cultural heritage,
 - Nuclear chemistry.

These research directions will be accomplished by promoting the following scientific areas:

1. Chemical Catalysis.
2. Chemical measurements.
3. Chemical structures, dynamics and mechanisms.
4. Chemical synthesis.
5. Macromolecular, supramolecular and nanotechnology.
6. Theory, modeling and computational chemistry.
7. Colloid and Interface Science.

8. Pharmaceutical chemistry.

Strategic Goal 1.2. Restructuring the research cooperation inside the Faculty and promoting cross-departmental research activities (deadline 2012)

The current administrative structure of the Faculty is based on the teaching activities of each Department in different fields of Chemistry and should be preserved as far as it fits to the educational obligations/activities/programs of the Faculty. On the other hand (and according to the recommendations in the SWOT analysis), the research activities in the Faculty will be stimulated by stronger interaction between research groups from different departments working in similar or complementary research problems (or with similar methods). Keeping the Departments as the basic administrative units of the Faculty, the following actions with respect to the research are planned.

Actions:

- Introduction of new research cluster organization of the Faculty adequate to the actual research activities (based on research interests and running projects) based on interaction and cooperation between the individual research groups. The rules for establishment and functioning of the cluster organization and decisions for establishment of the research clusters will be taken by the Faculty Council following the initiative of participating research groups. The appearance of such clusters will increase the visibility of the research areas of expertise of the Faculty staff and will help to keep the critical mass in the research area. The responsibility for the education and training activities in the Faculty will remain in the departments. The concentration of the research activities in the Faculty will reinforce its interaction with other scientific, educational, business and public organizations for solving different problems of the society applying new knowledge.
- Encouraging the multidisciplinary research, especially at the borders between the Chemistry, Biology, Physics, Material Science, Nanosciences, Economy, etc. by inviting participants from other Faculties of the University for participation in some of the research clusters.
- Obtaining external funding to support the planned changes and the interdisciplinary cooperation.

Strategic Goal 1.3. Promotion of existing and initiation of new research fields and activities (permanent)

Actions:

- Use the limited financial resources in the University funds for research as a tool for support the activities in the priority research areas. The funds to be granted to a lower number of proposals but with higher amounts in order to integrate the manpower of the Faculty on these areas.
- Provide transparent and objective reviewing of the projects based on well recognized criteria (number of publications, impact factors of the journals, novelty of the research, etc.). Advantage to be given to proposals of young scientists and/or in new for the Faculty research fields.

Strategic Goal 1.4. Strengthening the position of the Faculty as a leading national and internationally recognized center with expertise in Chemistry and Chemical education (permanent)

Actions:

- Using the rich research and teaching expertise of the Faculty staff in Chemistry, Chemical education and related fields to develop the Faculty as a leading national expert center in these fields and in influencing/consulting the national policy related to science, research, advanced technologies, higher education, etc.
- Active participation of the Faculty representatives and the staff at national scientific events, scientific, research, and technological discussions, etc.
- Stimulation of the participation of Faculty staff in national and international expert panels, peer-review panels, editorial boards, professional organizations, etc.

Assessments:

- Number of publications of Faculty members, also with respect to the new research clusters structure (annual assessment after establishment of the clusters).
- Number of participations of Faculty members at conferences, workshops, etc. scientific events (annual assessment).
- Number of Faculty researchers whose expertise is sought out at local, national, and international levels (annual assessment).
- Number of times the Faculty and its departments are sought out for formal partnerships (every three years).
- Number of nominations of qualified Faculty members for awards and number of granted awards (annual assessment).
- Number of Faculty members that took part in expert panels, invited speeches, etc. (annual assessment).

Strategic Priority 2: Development of the human potential

According to the evaluation report *the main strength of the Faculty is the quality of the people; number of well-qualified teachers and researchers*. This priority of the action plan is directed to **preservation and development of the existing research staff and recruitment of promising young scientists**.

The mobility of Faculty staff (especially the young scientists) and PhD students is necessary for the carrier development and is beneficial for both the researchers and the Faculty. Such increased mobility could result in broadening and modernizing of the existing and introducing of new for the Faculty research topics, introducing new experimental and teaching methods, intensifying the international collaborations, etc.

Strategic Goal 2.1. Developing the potential of the current Faculty staff (permanent)

Actions:

- Develop strategies to encourage international mobility, for both Faculty staff and students. The increased mobility would be beneficial for both the Faculty and the scientists.
- Develop mechanism for stimulating the post-doctoral fellowships for young researchers in recognized foreign universities and facilitate both the application and return in the Faculty.
- Stimulate the publication activity of young and established researchers; this activity should be one of the major points in the attestation of the permanent Faculty staff.
- Develop a mechanism for internal dissemination (e.g. seminars) of the research ideas and results within the Faculty with a special emphasis on PhD students and young researchers. This action will be combined with the activities of the new research clusters (planned in Priority 1) and could result in synergistic effects on the research collaboration and activities within the Faculty.
- Provision of state-of-the-art research infrastructure (see priority 3) to the Faculty scientists, especially in areas in which the Faculty has unambiguous achievements, to gain first hand experience with modern techniques needed in any world class institution.
- Encourage the Faculty staff to apply for sabbatical/development leaves.

Strategic Goal 2.2. Hiring new Faculty staff (permanent)

More than anything else, the recruitment and nurturing of capable researchers for tomorrow's knowledge society is emerging as the most important task of the universities. There is an increasing competition to recruit the most promising young researchers between Bulgarian and foreign universities and research centers. The Faculty of Chemistry systematically trains promising young researchers and try to offer them a reasonable research environment.

Actions:

- Keep the high requirements for hiring new professors possibly with gained research experience abroad.
- Find ways to introduce and provide financial resources for Post-doc positions.
- Using part of the University research fund especially for start-up project grants for newly appointed Faculty members, in particular Assistant and Associate Professors (if such support is not provided from other sources).

- Providing conditions to avoid teaching overload for newly appointed Faculty members and eventually to reduce their teaching load in order to allow them to start efficient research activities and to prepare good teaching courses.
- Involve highly-motivated, talented and qualified students in Faculty research. This strategy has the potential to attract more students to science and after that to PhD.
- Consider ways for internationalization of the Faculty staff both in relation to new study programs of the Faculty offered in English and to research activities. The first step in this direction is partial inclusion of lectures of foreign professors or researchers in the study programs or research projects of the Faculty.
- The establishment of an Alumni club could serve as a recruitment channel for selected post-doctoral scientists who are in the process of moving back to Bulgaria after working abroad (see Priority 7).

Strategic Goal 2.3. Implementation of adequate university system for recognition of research work/results as major part of the activities of the University professors (permanent)

Since the accomplishment of most activities is not of direct competence of the Faculty, the Faculty authorities and representatives in different University's and national councils will work to achieve the goals.

Actions:

- Suggest and work for adoption of a flexible university system for recognition of the research work and achievements as major part of the overall activities of the professors at the University. The system should include decreasing teaching load for professors with high quality research work and achievements.
- Reduce the standard teaching load of the permanent Faculty staff to be closer to loads at institutions with comparable research activity abroad. Consider the ways in which post-doc researchers hired within a research project to cover partially the teaching load assigned to permanent staff members.
- Suggestion to the Bulgarian National Science Fund (NSFB) and the authorities responsible for Structural funds to provide special funds for reasonable start-up grants of junior researchers employed in internationally recognized groups or of the established world class researchers in the University or in research institutes with high international reputation.

Assessments:

- Number of new hired professors at different levels with gained research experience abroad (annual assessment).
- Number and duration of international research, training and educational visits of Faculty staff and students (annual assessment).
- Number of students involved in the Faculty research (annual assessment).
- Positive changes in the national or university regulations in agreement with the activities in Goal 2.3 (annual assessment).

Strategic Priority 3: Improving and extending of the research infrastructure

The Faculty of Chemistry and its permanent staff has been systematically trying to acquire and develop the infrastructure necessary for the research activities of the staff. The strongest equipment platforms have been created in Materials Characterization, Computational Chemistry, Chemical Engineering, Elemental and Structural/Spectral Analysis, etc. but still standard European level of the equipment is rather far with respect both the types of apparatus and their novelty mainly due to lack of financial resources. One of the main priority of this action plan is the **further extension and upgrade with state-of-the-art research infrastructure of the Faculty**, which is crucial for its successful development as modern research and higher education center. The improvement of the existing infrastructure will be beneficial for the recruitment of high-level researchers and will create new opportunities for all researchers in the Faculty. The main source for acquisition of new research equipment will be application for projects from Faculty or individual research groups.

An important recommendation of the evaluation report is transformation of the available chemical laboratories into modern experimental laboratories meeting the European standards for working conditions, safety, storage of chemical, waste treatment, etc. In this connection, in this part of the action plan is included not only the modern “large” equipment but also complete renovation and modernization of the internal infrastructure of the building and particularly of the experimental laboratories.

Strategic Goal 3.1. Acquisition of new equipment and improving the efficient use of the existing research infrastructure (permanent)

Actions:

- Provide adequate infrastructure of advanced university level of laboratories for research and education.
- Strengthen the competence of research and technical staff so that the Faculty and its departments can meet the new academic challenges and effectively utilize modern instrumentation and administrative aids.
- Analyze the need for renovation and upgrading and give priority to the laboratories with urgent need for renovation. The initial priority will be given to NMR, mass spectrometers, high-resolution TEM, etc.
- Extension of the system of centralized Faculty laboratories, equipped with expensive up-to-date instruments and techniques, with free access for all researchers from the Faculty (like the existing SEM, AFM laboratories, elemental analysis). For this purpose external funding (national and EU Research infrastructure programs) to be mainly used. Financial contribution of the University (through the budget) will be a major concern of the Faculty administration. In particular, the salaries of the technical personnel running this common equipment as well as service costs of the instruments should be secured.
- On the base of a common agreement between the Faculty of Chemistry and other chemical institutes in Sofia and Bulgaria a mutual access and use of the available scientific unique equipment to be realized. Joint laboratories with leading institutes (research groups) of Bulgarian Academy of Sciences to be established, on the

principle of common research teams/interests (like the AFM, XRD, DSC/DTA, IR, XPS, etc. laboratories).

- Continue the efforts to extend the online access to literature – journals and reference databases, supported by the university or national funds. Where appropriate, financial support for the access to literature will be included as parts of the projects.

Strategic Goal 3.2. Improving the internal infrastructure of the building and the safety (2015)

Actions:

- Suggest (with the support from University authorities) to the responsible national authorities the utilization of suitable Structural funds or other financial sources for complete internal renovation and modernization of the building, reconstruction and up-to-date equipment of the research and educational laboratories, implementing of the European standards in safety, working conditions, storage of chemicals, waste treatment, etc. Consideration of the options for providing emergency electricity in particular for sensitive expensive equipment.
- Ensure a safe working environment for students, PhD students and the staff, by closely following safety rules and introducing new safety guidelines where necessary.
- Establish a centralized storehouse for chemicals and a system for the chemical waste treatment. Creation of the database for available chemicals for each research group and for the chemicals for teaching.
- Updating the Faculty emergency plan and training the staff for timely reaction in critical situations (fire, contaminations, ..).
- Renovation of the internet network and supporting computers, improved maintenance and safety.
- Construction of a new gas dispensing system for the Faculty Labs.
- Optimize the functioning of the University technical workshops for better serving the education and research activities.

Strategic Goal 3.3. Increase access to advanced scientific equipment not available in the country (permanent)

Actions:

- EU-funded programs for regional development to be sought and funds to be used for constructing new laboratories with up-to-date equipment.
- EU-funded programs for regional development to be sought and funds to be used for acquirement of new equipment and apparatus.
- Increase allocations for advanced scientific equipment and find ways to support international co-operations giving access to equipment that is not available or which is in short supply in Bulgaria (e.g. synchrotron sources, particle accelerators, etc.).

Assessments:

- Number of newly acquired research equipment and number of research groups that use the equipment (annual assessment).

- Number of trained researchers and students to work with the available at the Faculty research equipment (annual assessment).
- Number of the renewed research laboratories in the Faculty (annual assessment).
- Number of the allocations for advanced scientific equipment, made available for researchers from the Faculty (annually assessment).
- Successful application for funding for internal renovation of the building and laboratories.

Strategic Priority 4: Expanding and intensifying the regional and international collaboration

Strategic Goal 4.1. Expanding the national, intra-University and intra-Faculty collaborations (permanent)

Actions:

- Promote collegiality and cooperation among Faculty members. Strengthen and expand scientific collaborations within the Faculty and the University with focus on interdisciplinary research.
- Strengthen the existing and create new research collaborations with other national universities, research organizations and national laboratories.
- Increase the presentations of the Faculty at regional and national professional meetings in order to stimulate networking.
- Support and give priority to the start up and the maintenance of networks and areas of co-operation at national level.
- Identify gaps and opportunities for regional research.

Strategic Goal 4.2. Expanding the international collaborations (permanent)

Actions:

- Intensify the exchange of students and researchers, especially young scientists, with top class universities and research organizations worldwide.
- Improve the environment to create greater incentives for foreign students and researchers to come to the Faculty (enrich materials in foreign languages, increase the number of courses taught in English, provide appropriate working conditions for visiting scientists, etc.).
- Look for opportunities to enter into international knowledge and education networks and share ideas and experience on academic and social issues and results worldwide.
- Establish a new regular seminar program to bring more external scientists to the Faculty.
- Increase the presentations of the Faculty at regional and international professional meetings in order to stimulate networking.
- Exchange experiences how to build capacity for research, e.g. through technical meetings and exchange of researchers.
- Support and give priority to the start up and the maintenance of larger, academically strong international networks.

Assessments:

- Number of collaborative proposals to external agencies for joint research and/or instrumentation (annual assessment).
- Number of collaborative research projects at national agencies (annual assessment).
- Number of collaborative research publications by Faculty members (annual assessment).
- Number of presentations of the Faculty at regional, national, and international professional meetings (annual assessment).

Strategic Priority 5: Intensifying the cooperation with industry and exploring the gained applied knowledge

One of the main tasks of the Faculty is to contribute to society through research and fostering the industrial innovations. The Faculty is recognized as principle institution in preparing qualified specialists with adequate education and research training for innovative industry. For continuing the successful attaining of this task a closer relation with the industry is necessary. The Faculty must clearly articulate its critical role in the development of key human and knowledge resources for the transition of Bulgarian industry to a knowledge-based industry and to show successful examples for transfer of applied knowledge towards industry.

Strategic Goal 5.1. Strengthening the relationships with industry (permanent)

Actions:

- Promote contacts and co-operations with businesses and public administration in order to develop a support structure for collaborative research between industry and the Faculty.
- Make active use of diverse schemes for linking with industry, e.g. funded by the Bulgarian Ministry of Education, FP 7, EUREKA, etc.
- The Faculty in co-operation with national industry and state laboratories to identify areas and measures for educating and training the specialists that meet industry needs.
- Increase the industry oriented Master programs including courses delivered by specialists from industry.
- Provide effective marketing services to enhance student recruitment efforts.
- Create a seminar with lecturers from industry presenting their companies, research, etc. Alumni club is the shortest way to start this new seminar.
- Develop a better scheme for student's practices in industrial companies.
- Innovate and disseminate educational practices to close the gap between the Faculty-based learning and industry practice.

Strategic Goal 5.2. Fostering the transfer of applied knowledge towards industry and developing entrepreneurial behavior among Faculty members (permanent)

Actions:

- Establishment of spin-off companies on the base of the existing knowledge and experience after consultations with experts in economy, marketing and law. The regulations of the spin-off companies should ensure the leading role in the enterprise of the Faculty researchers involved in their creation, should provide clear benefits for the Faculty, and should allow possibility for high level training and realization of the students.
- Develop/adopt well understood procedures for translating discoveries to industrial solutions that the Faculty staff can easily follow and understand.

- Improve communication between the technology transfer center and the Faculty in connection with education of the Faculty members in patent process.
- Actively cooperate with the University's bodies for encouragement of the entrepreneurship and innovations. The University should work for increase the entrepreneurial behavior among the staff and create a culture wherein technology transfer activity is valued and rewarded and considered an important part of individual faculty, department, and center evaluations, including faculty evaluation for promotion. In this respect an enhancement of programs and opportunities that develop leadership skills should be planned.

Assessments:

- Number of joint projects of Faculty members and industry (annual assessment).
- Number of lectures in the newly developed seminar (annual assessment).
- Newly established cooperations between industry and the Faculty, e.g. for student's practice training, etc. (annual assessment).
- Number of established spin-off companies of the Faculty (annual assessment).
- Financial results of the established spin-off companies of the Faculty (annual assessment).

Strategic Priority 6: Funding Resources and Policies

According to the evaluation report *the resources for research activities are much too low to compete with institutions in countries of similar size. The government must recognize the special character of high-tech research leading to novel materials and products for a world-wide market.* In this direction the action plan includes measures to stimulate preparation and submission of good quality grants by Faculty staff and to convince the state authorities to provide better financial support for advanced hi-tech research in the field where the Faculty staff has expertise.

Strategic Goal 6.1. Increase the grant success and grant submission to national and international funding agencies

Actions:

- Identify major instrumentation needs and arrange a plan for submission of major instrumentation proposals on regular basis according to the analysis in Priority 3.
- Prepare and submit grants for laboratory equipment both for research and teaching laboratories in appropriate calls.
- Increase interactions with alumni with attention to developing both alumni friends and alumni donors.
- Insist in increasing the efficiency of University center for technology transfer for consulting and assisting the researchers in obtaining outside funds, writing and preparation of projects (including EU projects).
- Attention should be given to developing skills for fund rising in those groups that do not traditionally attract significant external funds.
- Provide rewards and incentives for grant applications (e.g. hours for grant writing, involvement of students in research, extensive service activities, etc. to be accounted as teaching load), both nationally and internationally funded, particular encouragement should be given for participation in EU Frameworks initiatives.

Strategic Goal 6.2. Develop skills for grant-writing and fund-rising in students and Faculty members

Actions:

- Create programs and opportunities, especially for young scientists to develop proposal writing and fund rising skills.
- Engage students (and particularly PhD students) in developing grant-writing abilities. Offer 1-credit course on grant preparation, writing, review process, budget preparation, sponsor identification for interested students at different levels in the Faculty. Involve PhD students explicitly in proposal preparation.
- Find and redirect cost savings to support student research.
- Improve the level of the submitted proposals via
 - Encouraging internal review as part of proposal preparation process.
 - Encouraging discussion of reviews for improving resubmissions.
- Identify a Faculty team, build on past experience to submit general proposals for the Faculty development.

Assessments:

- Total amount of the external funds obtained through research grants by the Faculty staff (annual assessment).
- Analysis of the internal grants programs and the research growth stimulated by them (annual assessment).
- Number of recruited externally funded scholars, PhD students and post-docs (annual assessment).

Strategic Priority 7: Improving visibility of the research and public communications

Faculty's most important contribution to society is educating highly qualified graduates and researchers in the chemistry and conducting research on a high international level. These contributions and the achievements of the Faculty staff should be made more visible for the public. Until now, however, the Faculty has underperformed in public relations and in maintaining and highlighting its own record of achievement (superior for the country) among the society. The Faculty will develop a dynamic action plan for work with the media and establish permanent systems of communication in order to become more visible in the public eye. This includes support to popular science arrangements and the development of mechanisms to encourage the exposure of science subjects in various media channels: TV, newspapers, Internet, etc.

Strategic Goal 7.1. Enhance the visibility and reputation of the Faculty in the society

Actions:

- Promote participation in projects and initiatives aiming to increase linkages with society.
- Set-up a user-friendly public oriented web-site in Bulgarian in order to increase the interest in the society not only to the achievements of the Faculty but in Chemistry in general.
- Develop and update a clear, user-friendly external website in English at all levels (directed to potential international academic or industrial partners) – in parallel to the Bulgarian website (directed to potential partners from the country).
- Develop a network/group of trained specialists, including Faculty staff and students, who will be available to speak with reporters, public officials, schools, etc. in order to explain the science and technology, advice on emerging areas, and ethical implications of science and its applications.
- Strengthen ties with professional organizations, i.e. Association of Chemistry Teachers in Bulgaria, the Union of Chemists in Bulgaria, ... etc., and actively participate in their activities.
- Educate the students in Science Communications through a lecture course at master level.
- Communicate understanding of the importance of science in our common culture.

Strategic Goal 7.2. Establishment and development of Alumni Program

Actions:

The Faculty of Chemistry still does not have such a program although this is proved to be an efficient way for development and support of educational and research activities. This program should work in two directions: (i) create loyal alumni while they are still students in the Faculty, and (ii) sustain loyalty by continued engagement after graduation.

- Establish a network of alumni and foster a support group for the Faculty to bolster effective linkages between the Faculty and the alumni.
- Form venues for interchange between alumni and students to foster mutual communications and expand students' perspectives: the succession of information from generation to generation.
- Create an annual alumni letter and select annual alumni "success stories" to be announced at the Faculty public web site and to be used in presentations to attract new students in the Faculty.
- Identify routines that can become traditions, including alumni events such as meetings at reunions and national meetings, informal meetings of alumni with undergrads and graduates.
- Update alumni data base.
- Establish web-based alumni communication.

Assessments:

- Number of projects for science communications and Faculty members participating in such projects (annual assessment).
- Number of members of the alumni network (annual assessment).
- Number of the alumni events (annual assessment).
- Number of papers, presentations, performances, lectures, etc., given by Faculty members for a wide public (pupils, society, etc.) (annual assessment).

Strategic Priority 8: Maintaining the gender balance

According to the evaluation report in the Faculty of Chemistry *there is no problem for women to have excellent career opportunities, since throughout all levels there are noticeable number of women*. In order to preserve this good practice and to make it a tradition the Faculty plans the following actions:

Strategic Goal 8.1. Preserving the existing good gender balance at the Faculty

Actions:

- Develop Faculty display materials with positive images of equally women's and men's contribution to the Faculty.
- Placing press and internet articles recording equally women's and men's achievements in the Faculty of Chemistry.
- Keep on preserving the good existing balance between female and male researchers at all stages of their career development.

Assessments:

- Number of the female and male researchers at different levels in the Faculty (annual assessment).

Implementation and control of the action plan

1. The action plan is accepted and modified (if necessary) by the Faculty council. The Council controls the accomplishment of the Action plan annually after report of the Dean of the Faculty. After the approval of the annual report, a summary of the report is published on the Faculty web site.
2. The Dean of the Faculty organizes the accomplishment of the action plan. If necessary, the Dean may propose to the Faculty Council to appoint commissions of Faculty members to work on certain priorities of the action plan.