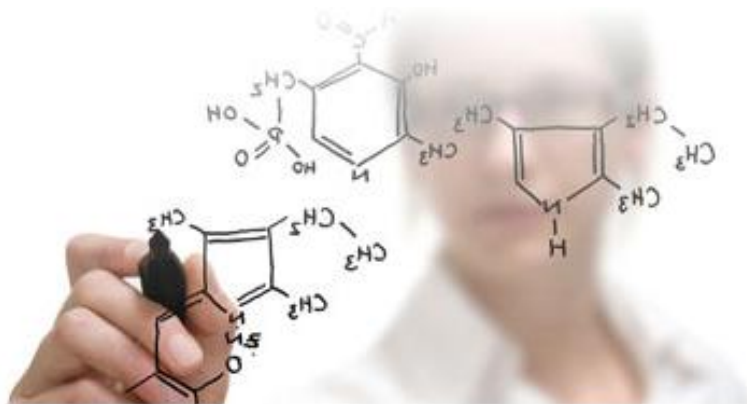


International Conference Initiatives in Chemistry Teacher Training  
29<sup>th</sup> of November 2013, Limerick, Ireland

# CHEMISTRY TEACHERS' TRAINING: BULGARIAN REALITY

M. Kirova<sup>1</sup>, A. Tafrova – Grigorova<sup>1</sup>, M. Koleva<sup>2</sup>  
Sofia University<sup>1</sup>  
Technical University of Gabrovo<sup>2</sup>



Technical University of  
Gabrovo



Lifelong  
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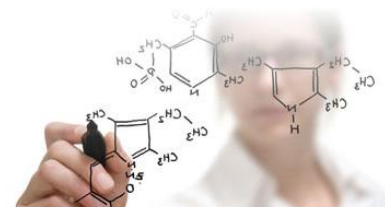
# 1 Teacher Training: policy and realities

## 1.1 State policy

- Ministry of Education and Science coordinates activities related to the planning, organization of education and improvement of teachers' qualification;
- The educational and qualification activities are performed by institutions or specialized units accredited by the National Evaluation and Accreditation Agency;
- Four state universities are accredited in training of chemistry teachers : Sofia University, Plovdiv University, Shumen University and South-west University of Blagoevgrad



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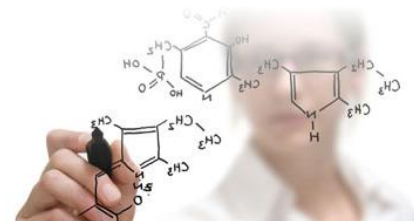
## 1.2 Training of Science Teachers

### Initial Teacher Training

- *Bachelor degree courses* - combine double programmes (Chemistry and Physics, Chemistry and Informatics, Chemistry and Biology etc.)
- *Master degree courses* - for in-service teachers holding bachelor's degree in Chemistry but also in Chemical engineering, Agrarian science, Pharmacology, Dental medicine etc.
- Minimum amount of subjects, required for the acquisition of “teacher” qualification, is regulated by law



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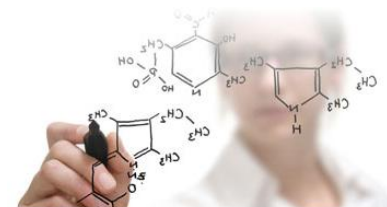


# In-service Teacher Training

- Possibilities for in-service teacher training:
  - Universities (Sofia University, Plovdiv University and Thracian University of Stara Zagora)
  - other sources - special programmes, projects, websites and private organizations:
    - Project „Qualification of Pedagogical Experts”*, co-funded by the European Social Fund - over 42000 teachers (80% of the total number of teachers) to train by the end of 2014, focusing on novices and teachers who rejoin school staff after continual leave (over two years);
    - National Educational Portal* - developed by the Ministry of education
    - Teachers Innovators Network (Teacher.bg)* - virtual school on introduction of electronic teaching content in the classroom;
- Access to in-service training depends on school head administrations.



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## 1.3 Weak points

### Continuous qualification of teachers

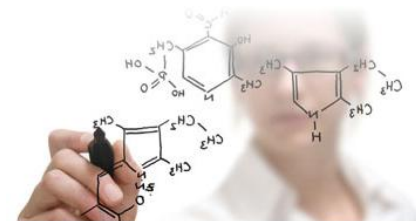
Bulgaria is among the European countries with the highest percentage of teachers who are Master degree holders, **but...**

- half of the teachers do not have qualification level;
- every second teacher possesses only minimum of required qualification and is not involved in a follow-up in-service training
- The five qualification levels are not compulsory and are covered after a certain amount of work experience is reached.

[http://bnr.bg/sites/radiobulgaria/Lifestyle/Life/Pages/011110\\_u4iteli.aspx](http://bnr.bg/sites/radiobulgaria/Lifestyle/Life/Pages/011110_u4iteli.aspx)

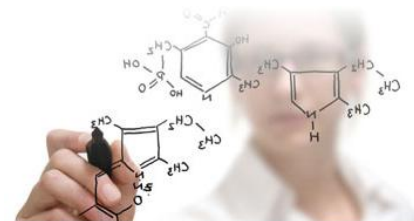


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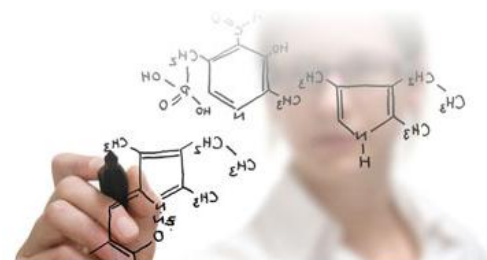
## Low and inadequate material incentives for professional upgrading

- The funds allocated for that purpose amount to barely 0,8% of the entire salary fund
- 71% of all teachers are dissatisfied with their payment - the most satisfied are young teachers of age below 25 but they are the smallest group in the teachers' guild; Those of age 56+, who constitute the largest segment of the guild, are the most dissatisfied



## Policy related to the young teachers

- Bulgaria has not programmes for introduction of newly appointed teachers;
- Quick professional growth requires working experience of at least ten years as a prerequisite for acquiring the status of “senior teacher”

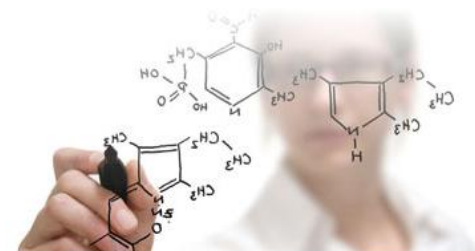


# The major problem in the teachers' qualification policy:

- the *lack of present day analysis* on the specific types of in-service courses needed by teachers'
- The usual practice is to offer a list of courses which, as is often the case, are selected by the school principal



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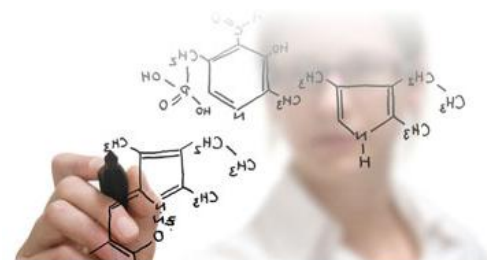
## 2 Training of Chemistry Teachers: the teachers' view point

An opinion poll conducted among pre-service and in-service chemistry teachers outlines several aspects:

- Need of further qualification oriented at the application of problem-based approach, team work, work in small groups, collaborative and joint learning in a classroom;



**This necessitates the updating of university curricula for teacher training**



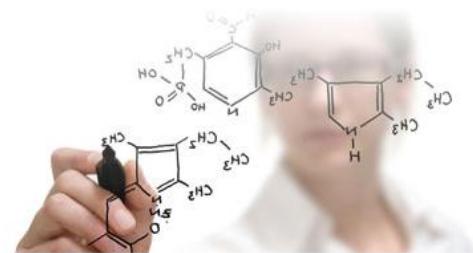
# Training of Chemistry Teachers: the teachers' view point...

Chemistry subject content in schools is oriented more to theoretical rather than practical knowledge

- Science teachers are interested in a variety of modern scientific topics such as environmental chemistry, new materials, nanotechnologies, food and health, green chemistry etc.



**Science curriculum should be improved to ensure more real life knowledge, experimental work and key competences.**



# Training of Chemistry Teachers: the teachers' view point...

There is a serious need of upgrading teachers' competences in application of ICTs in school science education;

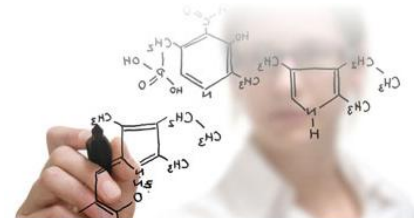
- Chemistry teachers are motivated to upgrade their ICTs competency



**Important to evaluate the current level of teachers' competence so as to define the needs for improving their qualification**



A system for evaluating chemistry teachers' competence based on the guidelines for ICT competence assessment standards of UNESCO developed by the Research laboratory on chemistry education (Sofia University)



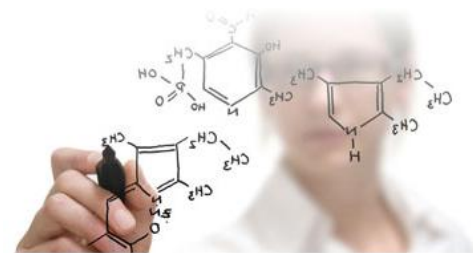
# 3 The Impact of the Chemistry Network Project on Teacher Training

## Chemistry Network Project activities on training issues of chemistry teachers aimed at:

- To clarify the problems related to chemistry teachers training through the viewpoint both of teachers and experts involved in teacher training activities;
- To discuss possible ways for improving the efficiency of teachers' training system in general and Chemistry teacher training in particular, by considering teachers' opinion



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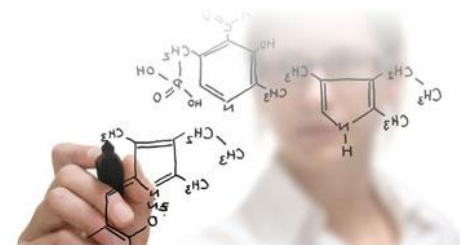


# Project Activities

## National workshop on Training issues of Chemistry teachers (May'2013, Gabrovo)

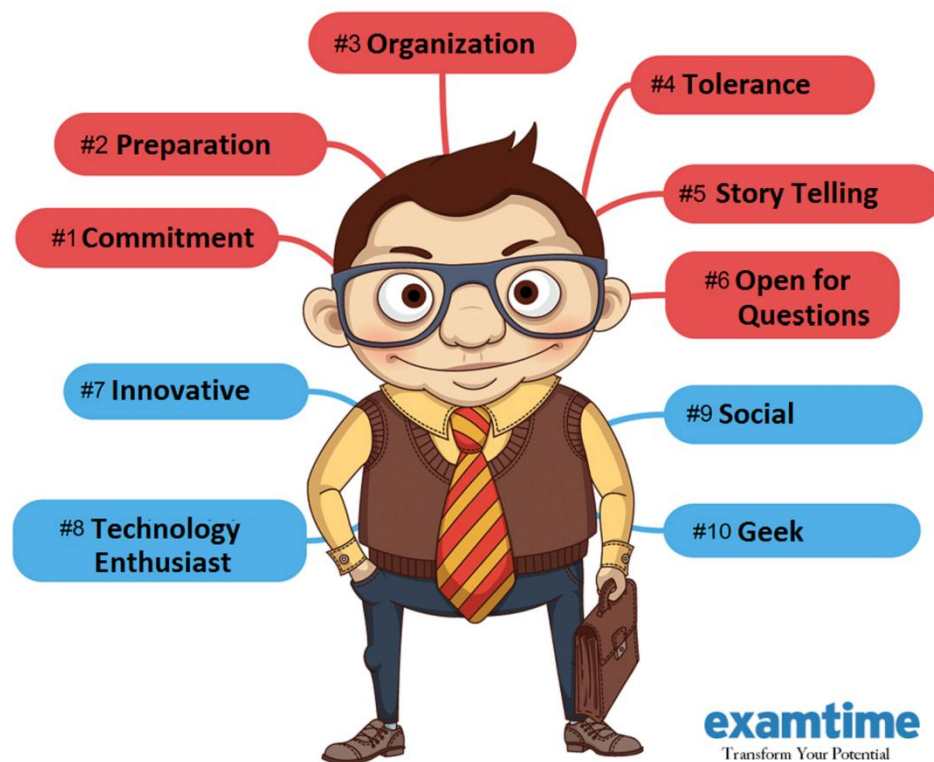
The participants agreed that:

- The role of the teacher in the modern process of chemistry education for increasing the interest and motivation of students towards the subject is crucial;

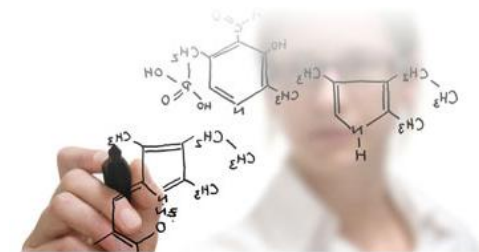


# 10 Skills for Modern Teachers

- In order to perform it teachers must constantly develop their pedagogic and communicative skills, particularly those ones related to the use of modern technologies for educational purposes.



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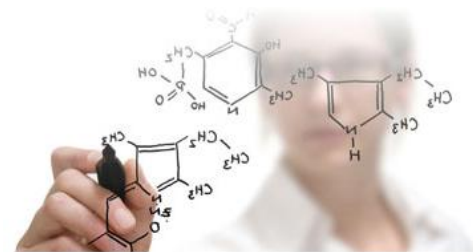


# This raises problems concerning qualification such as:

- Developing a modern conception and updating the **normative basis** regulating the activities for teachers' qualification by considering and using teachers' opinion
- **Binding these activities with proper financial incentives**, which will motivate teachers to improve their pedagogical skills;
- **Developing effective qualification courses for distance or online training** which will enhance and motivate teachers to expand their competence



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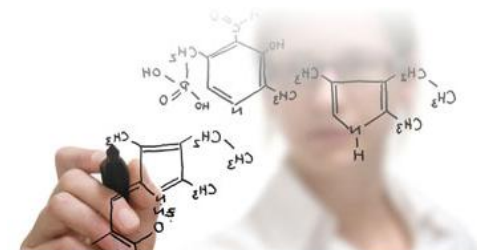
# International Conference on Training Issues of Chemistry Teachers (TICT), 26 of June 2013, Gabrovo:

The participants came to the common conclusions that:

Although some practice in teachers training established in the different countries, **there is a common need of clear policy and regular activity in science teachers' training** to guarantee their permanent professional development and, thus, the high quality of the educational process.



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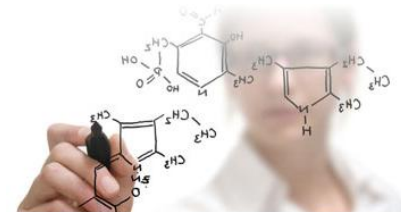
# 4 Conclusions

The national policies for teacher training should be addressed to the following:

- **the state should invest more in the natural sciences education**, including chemistry by supporting teachers' professional development
- **schools must be supported in attracting qualified teachers** and universities must be assisted to attract the best students for science teacher profession;
- the state educational requirements, programmes of study and curriculum should be reviewed and improved;
- **the legislative framework** defining the organization and conduction of training and the evaluation of the qualification and skills of the teachers should be updated



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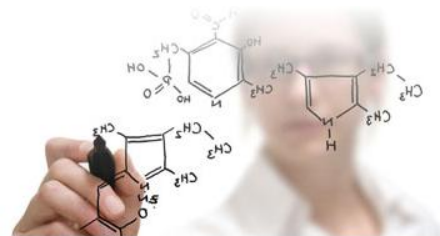
# Chemistry Network Project Contribution

Chemistry is all around Network Project could effectively contribute to enhance the chemistry teachers' training and qualification by:

- involvement of new associated schools and institutions responsible for teachers' training in the Project activities;
- supporting science (chemistry) teachers in all aspects of their work by providing them with methodological materials, interactive teaching resources
- improving the interaction between chemistry teachers and scientific experts.



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# Thank you for your attention!



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