



<http://www.tempus-mchem.ac.rs/>



TEMPUS-MCHEM PROJECT ACTIVITIES AT TECHNICAL FACULTY IN BOR IN PERIOD 2010-2013

D.Živković, M.Antonijević, G.Bogdanović, S.Milić,
M.Petrović, M.Radovanović, A.Mitovski, Lj.Balanović



*University of Belgrade, Technical Faculty in Bor
VJ 12, 19210 Bor, Serbia*



Introduction

Tempus MCHEM international project [1] :

Modernization of Post-Graduate Studies in Chemistry and Chemistry Related Programmes

Project period: 2010-2013

- *AIM 1:* to contribute to creation of a more flexible and a more responsive system of high quality master programmes and courses in chemistry & environmental studies
- *AIM 2:* to meet professional, employer and workplace needs and the wider desires of Serbian society



TEMPUS MACHEM objectives

- modification and regulation of learning outcomes and competences of existing master programmes in line with best EU practices
- modernization of curriculum delivery and quality standards of the Master programmes in chemistry in line with the recommendations for the Euromaster label; and
- development of new interdisciplinary master programmes at universities in Serbia



TEMPUS MACHEM activities

- the development and implementation of benchmarking and quality control/assurance procedures;
- modernization and harmonization of curriculum outputs with best European practice;
- updating academic and professional skills of Serbian faculty;
- modernization of IT and laboratory facilities;
- development of teaching materials using e-technologies;
- implementation of continuing professional development and lifelong learning strategies; and
- stakeholder and thematic support network building

TEMPUS MACHEM consortium

- University of Greenwich (UK) – project manager Prof. dr Steve Leharne and project coordinator Prof. dr Milan Antonijević 
- RWTH Aachen University (Germany) 
- Brno University of Technology (Czech Republic) 
- University of Nova Gorica (Slovenia) 
- University Lower Danube of Galati (Romania) 
- University of Belgrade: *Faculty of Chemistry, Faculty of Physical Chemistry, Faculty of Mining and Geology, Faculty of Technology and Metallurgy, Technical Faculty in Bor* (Serbia)
- University of Niš: *Faculty of Sciences and Mathematics and Faculty of Technology in Leskovac* (Serbia) 
- University of Novi Sad: *Faculty of Science* (Serbia) 
- University of Kragujevac: *Faculty of Science* (Serbia) 
- High Business-Technical School of Užice (Serbia) 



MCHEM activities organized by TF BOR

Our Faculty was engaged as the organizer of two important activities in the scope of:

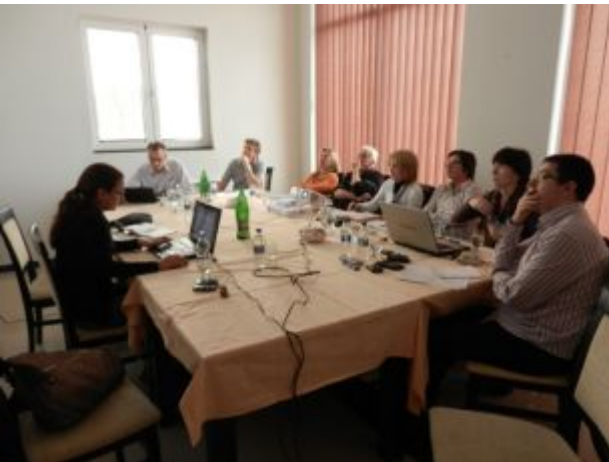
→ Work Package 4 - Development of new interdisciplinary MSc programmes in Environmental Chemistry, and

→ Work Package 5 - Strengthening the work of the stakeholder and professional networks



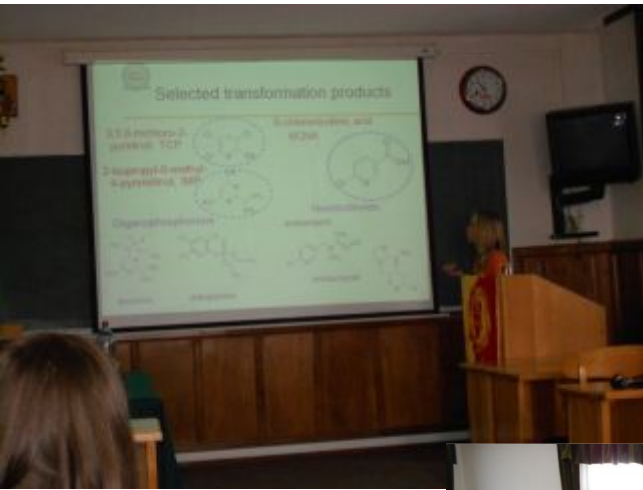
Work Package 4: *Workshop “Remediation”*

- **Workshop “Remediation”** - held in Bor from 4-6 April 2012, organized by Technical Faculty in Bor
- **Workshop topic:** development of the course “Remediation” within new MSc programme in Environmental Chemistry
- **Participants:** from five different universities from three countries - University of Greenwich (UK), University of Nova Gorica (Slovenia), University of Niš, University of Kragujevac and HTS Užice



During the Workshop two lectures were organized for students, professors and other colleagues engineers from Technical faculty in Bor, Mining and Metallurgy Institute Bor and RTB Bor Company:

1. Prof. dr Polonca Trebše - *University of Nova Gorica, SLO*: Application of different AOP for pesticide removal
2. Prof. dr Colin Hills - *University of Greenwich, UK*: Introduction to stabilisation/solidification for the treatment of contaminated land and waste





During the Workshop terrain visit to RTB Bor mining landfill material and flotation tailing was organized for the workshop participants

Work Package 5: *Continual Professional Development (CPD) Course “Wastewater treatment methods”*

- Continual Professional Development Course (CPD) on “Wastewater treatment methods” was organized at TF Bor in period 25-26 03 2013
- **AIM:** dissemination of good practices and new trends in wastewater treatment, as well as very valuable exchange of experiences among the professionals dealing with the wastewater from different points of view



Textbook published in the frame of this CPD course

Details from CPD "Wastewater treatment methods" lectures

➤ **Participants:** various institutions - faculties, institutes dealing with the analyses of different kinds of waters, postgraduate students and some industrial plants representatives



➤ **The lecturers:** Prof. dr Milan Antonijević, Prof. dr Velizar Stanković and Prof. dr Grozdanka Bogdanović



Mobilities of students/professors during MCHEM project

- in the frame of the Work Package WP3 **Modernization of teaching methodology and student assessment procedure**, professors and teaching assistants from Technical Faculty in Bor visited large number of HE institutions in the European Union
 - mobilities to Nova Gorica, SLOVENIA (2)
 - mobilities to Aachen, GERMANY (2)
 - mobilities to Galati, ROMANIA (1)
 - mobilities to Brno, CZECH REPUBLIC (1)
 - mobilities to London, United Kingdom (3)
- enabled exchange of experiences concerning accreditation of study programmes, curricula and the evaluation process
- enabled establishing similarities and differences in the organization of postgraduate studies at participating universities



Details from mobility visits of TF Bor staff to different HE in EU

Equipment and books purchased in the frame of TEMPUS MACHEM project

- as a part of *the main project aims* - to improve creation of more flexible and approachable system of high quality study programs through modernization of teaching equipment in the Master programs in chemistry, chemistry-related fields and especially – environmental studies
- 4 interactive tables were installed in the classrooms at Technical Faculty in Bor and 4 digital voice recorders, 1 digital camcorder, 1 digital camera and 4 external hard drives were provided
- 20 books on Environmental science and engineering, Impact assessment of recycling, Environmental (air and soil) pollution, Wastewater treatment, and Bioremediation technology were purchased
- in line with the EU recommendations and to provide better learning outcomes and competences of existing master programs with best EU practices



New books in library and new teaching equipment at TF Bor classrooms

Conclusion



- **TEMPUS MCHEM role** - to modernize program transfer and quality standards of the *Master programs in chemistry, chemistry-related fields and especially environmental sciences*, in line with the EU recommendations and to provide better learning outcomes and competences of existing master programs with best EU practices