



ŠIAULIŲ
UNIVERSITETAS

UNIVERSITY OF ŠIAULIAI



SMC “SCIENTIA EDUCOLOGICA”

**2nd International Baltic Symposium on Science and Technology Education
BalticSTE2017**

**“SCIENCE AND TECHNOLOGY EDUCATION: ENGAGING THE
NEW GENERATION”**

12-15 June 2017

SYMPORIUM PROGRAMME



Šiauliai, Lithuania

Symposium Organizer

Scientific Methodical Center „Scientia Educologica“ in cooperation with Faculty of Education Science and Social Welfare, Šiauliai University

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Prof. Dr. Milan Turčani, *Constantine the Philosopher University, Slovakia*

Symposium Website

<http://balticste.com>

Sunday
11th June 2017

17.30 - 20:00

ICE-BREAKING

(Room 115, Faculty of Education Science and Social Welfare, University of Šiauliai, P.Višinskio Street 25)

Monday
12th June 2017

8:00 - 9:30

REGISTRATION

(Second Floor, Library of Siauliai University, Vytauto Street 84)

9:30-10:00

OPENING CEREMONY

(Second Floor, Room 205, Library of Siauliai University, Vytauto Street 84)

Musical Greeting (Dept. of MP, Šiauliai University) **Evaldas Vaikasas**
Rector of the University **prof. dr. Donatas Jurgaitis**
Dean of Faculty of ESSW **assoc. prof. dr. Erika Masiliauskienė**
International Greeting (Italy) **Paolo Bussotti**
Symposium Chair **prof. dr. Vincentas Lamanauskas**

10:00-12:00

PLENARY MEETING (1)

(Second Floor, Room 205, Library of Siauliai University, Vytauto Street 84)

Chairmen: **Miia Rannikmae, Vincentas Lamanauskas**

- Jonas Jasaitis.** The role of scientists in formation of state strategy (Lithuania)
- Miia Rannikmae.** Incorporating career awareness with motivational education through science approach: two alternative foci (Estonia)
- Raffaele Pisano.** On the epistemic interplay between physics and mathematics such as a dynamical framework within nos-research teaching science (Italy)

12:00-14:00



LUNCH

14:00-16:00

WORKSHOP (1)

(Second Floor, Room 205, Library of Siauliai University, Vytauto Street 84, Šiauliai)

Chairmen: **Angela James, Boris Aberšek**

- Marcus Vinicius Pereira, Agnaldo Arroio.** Analysis of science videos produced by Brazilian Ministry of Education (Brazil)
- Alvin U. Ugwu.** Locating evidences of education for sustainable development in Sub-Saharan African science and technology education curricular: a comparative analysis of Nigerian and South Africa (South Africa)
- Pavels Pestovs, Dace Namsone.** National level test in science in Latvia for assessing how students explain phenomena scientifically (Latvia)
- Renata Stasko, Karolina Czerwiec, Katarzyna Potyrala, Emanuel Studnicki, Anna Michniewska.** Education in the area of new new media on the example of youtube and interdisciplinary workshops (Poland)
- Solange W. Locatelli, Paulo H. Gomes, Agnaldo Arroio.** The influence of chemical language in the reworking of basic concepts in electrochemistry (Brazil)

16:00-16:30

POSTER PRESENTATIONS

(Fourth Floor, Hall, Library of Siauliai University, Vytauto Street 84, Šiauliai)

During symposium
POSTERS

1. **Snježana Smerdel, Meliha Zejnilagić-Hajrić.** Pre-learning activities using a textbook: a Croatian view (Croatia, Bosnia and Herzegovina)
2. **Miroslav Prokša, Zuzana Haláková, Anna Drozdíková.** Chemical equilibrium in terms of its conceptual understanding in the context of submicroscopic, macroscopic and symbolic interpretation by learners (Slovakia)
3. **Violeta Šlekienė.** Lithuanian non-formal educational school of young physicists "Photon" (Lithuania)
4. **Zuzana Balázsová.** How much do nurses remember from school physics? Some results of comparing analysis (Slovakia)
5. **Violeta Šlekienė, Loreta Ragulienė.** Experimental physics activities using inquiry based approach (Lithuania)
6. **Rita Makarskaitė-Petkevičienė.** Natural science lessons: pre-service primary teachers' experience (Lithuania)
7. **Vincentas Lamanauskas, Violeta Šlekienė, Loreta Ragulienė.** Math and science teachers collaboration: MaT²SMc project experience (Lithuania)
8. **Natálie Karásková, Rafael Doležal, Nadezhda Maltsevskaya, Karel Kolář.** Didactic capacity of selected Czech and Russian secondary school textbooks of organic chemistry and their mutual comparison (Czech Republic, Russia)
9. **Katarzyna Potyrala, Karolina Czerwiec, Renata Stasko.** Natural history museums as a space of science education in the knowledge-based society (Poland)
10. **Anna Michniewska, Karolina Czerwiec, Katarzyna Potyrala, Renata Staško, Emanuel Studnicki.** Increasing youth's ecological awareness of air pollution with the use of new media (Poland)

Tuesday
13th June 2017

08:00

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17:00/18:00



OUTDOOR WORKSHOP
Historical Aspects of Science & Technology

Wednesday

14th June 2017

09:00-10:30

PLENARY MEETING (2)

(Second Floor, Room 205, Library of Šiauliai University, Vytauto Street 84, Šiauliai)

Chairmen: **Metka Kordigel-Aberšek, Martin Bilek**

1. **Angela James.** Science education in South Africa: engaging the new generation of student teachers in service-learning for sustainable development (South Africa)
2. **Agnaldo Arroio.** Scientific Media literacy and young generation (Brazil)

10:30-11:00



COFFEE BREAK

11:00-12:30

SECTION 1 General S&T Education Issues

(Fourth Floor, Room 411, Library of Šiauliai University, Vytauto Street 84, Šiauliai)

Chairmen: **Dagnija Cedere, Bulent Cavas**

1. **Ineta Helmane, Dagnija Cēdere, Vilija Targamadze, Inese Jurgena.** Students' interest in the science subjects and mathematics in schools of Latvia and Lithuania: a comparative study (Latvia, Lithuania)
2. **Elena Vasilevskaya.** University natural science education: current state and modern trends (Republic of Belarus)
3. **Cagla Bulut, Bulent Cavas, Kadir Demir.** A reflection of preservice science teachers' views of open access dimension of responsible research and innovation (Turkey, USA)
4. **Rita Birzina, Dagnija Cedere, Liva Petersone.** The first year students' adaptation to natural science studies in higher education (Latvia)
5. **Loreta Juškaitė.** Comparison of the national diagnostic paper-based and online tests (Latvia)
6. **Eva Kralova.** Motivation and attitudes of medical students towards teaching and learning natural sciences (Slovakia)

11:00-12:30

SECTION 2

S&T Education Approaches and Praxis

(Fourth Floor, Room 412, Library of Šiauliai University, Vytauto Street 84, Šiauliai)

Chairmen: **Mónica Baptista, Jack Holbrook**

1. **Boris Aberšek, Kosta Dolenc, Andrej Flogie.** Research based learning and proprioception (Slovenia)
2. **Martin Bilek, Jiri Rychtera, Katerina Chroustová.** Identification of key and critical points in early chemistry curriculum in Czech Republic (Czech Republic)
3. **Liberato Cardellini.** Deliberate practice: how to teach problem solving in a meaningful way (Italy)
4. **Rafael Doležal, Natálie Karásková, Nadezhda V. Maltsevskaya, Karel Kolář.** Supporting conceptual learning in organic chemistry through semi-empirical molecular modeling: heuristics of diels-alder [4+2] cycloadditions for preparation of potential TLR4 modulators (Czech Republic, Russia)
5. **Metka Kordigel Aberšek.** Writing versus typing in the biology classroom: a case study in Slovenia (Slovenia)

12:30-14.00



LUNCH

14:00 -15:00

SECTION 1

General S&T Education Issues

*(Fourth Floor, Room 411, Library of Šiauliai University, Vytauto Street 84, Šiauliai)
Chairmen: Elena Vasilevskaya, Katarzyna Potyrala*

- Vincentas Lamanauskas, Dalia Augienė.** Scientific research activity of students pre-service teachers at university: comparative analysis of understanding, interest and career aspects (Lithuania)
- Alex Wirth, Boris Aberšek.** Discipline in schools: some actual issues (Slovenia)
- Sule Bayraktar, Zeynep Kuvvet.** Preschool children's ideas about living things (Turkey)

14:00 -15:00

SECTION 2

S&T Education Approaches and Praxis

*(Fourth Floor, Room 412, Library of Šiauliai University, Vytauto Street 84, Šiauliai)
Chairmen: Karolina Czerwiec, Mónica Baptista*

- Antti Rissanen, Kalle Saastamoinen.** Challenges in assessment and guidance in study group based learning (Finland)
- Mónica Baptista.** Collaboration between physics and chemistry teachers and expert: a contribution to teachers' professional development (Portugal)
- Lukáš Richterek, František Látal.** Various kinds of problems in an electricity and magnetism assessment within an introductory physics course for chemistry majors (Czech Republic)

15:00-15:30



COFFEE BREAK

15:30 -16:30

SECTION 1

General S&T Education Issues

*(Fourth Floor, Room 411, Library of Šiauliai University, Vytauto Street 84, Šiauliai)
Chairmen: Elena Vasilevskaya, Katarzyna Potyrala*

- Anna Klim-Klimaszewska, Stanisława Nazaruk.** Implementation of geometrical concepts in kindergarten (Poland)
- Bulent Cavas, Cagla Bulut.** Students' perceptions toward science course and inquiry based science education (IBSE) implementation in schools study earthquakes (SSE) Project (Turkey)
- Meliha Zejnilagić-Hajrić, Adel Polutak, Ines Nuic.** Group work in evaluation of primary school students' knowledge about carbohydrates (Bosnia and Herzegovina)

Discussion

15:30 -16:30

SECTION 2

S&T Education Approaches and Praxis

*(Fourth Floor, Room 412, Library of Šiauliai University, Vytauto Street 84, Šiauliai)
Chairmen: Teresa Conceição, Maciek Janiuk*

- Oxana N. Ryzhova, Elizaveta A. Belevtsova, Nikolay E. Kuz'menko.** Chemistry and mathematics: mathematical content of chemical tasks (Russia)
- Teresa Conceição, Mónica Baptista, João Pedro da Ponte.** Lesson study as a professional development process of preservice physics and chemistry teachers (Portugal)

Discussion

19:00-21.30



SYMPORIUM DINNER

Thursday
15th June 2017

09:00-10:30

INTERACTIVE PLENARY

*(Second Floor, Room 205, Library of Šiauliai University, Vytauto Street 84, Šiauliai)
Moderator: Vincentas Lamanauskas*

Andris Broks. Systems thinking: Joint philosophical and psychological basis for modern science and technology education (Latvia)

Reviews to the theme:

Raffaele Pisano, Italy
Angela James, South Africa
Jack Holbrook, Estonia
Bulent Cavas, Turkey
Boris Aberšek, Slovenia

Discussion

10:30-11:00



COFFEE BREAK

11:00-12:30

WORKSHOP (2)

S&T Education Challenges and Insights

*(Second Floor, Room 205, Library of Šiauliai University, Vytauto Street 84, Šiauliai)
Chairmen: Agnaldo Arroio, Vincentas Lamanauskas*

1. **Uladzimir Slabin.** Verkhovsky Eponyms in the Epoch of Educational Ethnocentrism (USA, *video presentation*)
2. **Suriya Gilmanshina, Aygul Gayfullina, Iskander Gilmanshin.** The formation of the environmentally directed thinking as the necessary quality of personality in modern conditions (Russia)
3. **Katrin Vaino, Toomas Vaino, & Miiia Rannikmäe.** Students' conceptions of the nature of technology: development of a reliable intrument (Estonia)
4. **Vyacheslav Kazarenkov, Saulius Mickevičius.** The significance of self-education in professional training and personal development of future specialist at university (Russia, Lithuania)
5. **Hae-Ae Seo, Hye-Sook Lee, Soonok Kim.** Influence of nanotechnology related SSI program on competencies of high school students in Korea (South Korea)
6. **Vyacheslav Kazarenkov, Tatyana Kazarenkova.** Fostering skills of cross-cultural communication within university education (Russia)

Discussion

12:30-13:00

SYMPOSIUM CLOSING

(Second Floor, Room 205, Library of Šiauliai University, Vytauto Street 84, Šiauliai)

What Do We Do NEXT?

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