

Tuesday 6th September

	Cloister (Ground floor)	
19:00 – 21:00	Pre-Registration //Welcome to ECRICE2016 Snacks and Refreshments - Musical Welcome (20:00-20:30 h)	

Wednesday 7th September

	Room 1 Sala Prat de la Riba / Room 2 Sala Pere i Joan Coromines	
8:30 - 8:55	OPENING CEREMONY: 13th ECRICE Inspiring Chemistry Education Through Research	

	Room 1 Sala Prat de la Riba / Room 2 Sala Pere i Joan Coromines	
9:00 - 9:55	Plenary Lecture: PL 01 Online labs in science education, new possibilities for active student learning	Ton de Jong University of Twente The Netherlands

	Room 1 Sala Prat de la Riba	
10:00 – 10:45	Keynote Lecture: KN 01 A new approach to Pedagogical Change: Research the Problem and Involve the Teachers in the Process	Diane M. Bunce The Catholic University of America, Washington, DC United States

	Room 2 Sala Pere i Joan Coromines	
10:00 – 10:45	Keynote Lecture: KN 02 Informal Chemistry Education: A Missed Opportunity?	Sarah Hayes University of Limerick Ireland

10:50 – 11:20 Coffee Break – Cloister (Ground floor)

Poster Communications PC1 (Cloister – 1st Floor)

11:25 – 12:10	Poster Communications PC1 (P1-P30) (see the lists at the end of program)	List of PC1.1: Presentation by the authors (P1-P15) Chair: Consol Blanch, Universitat de Vic, Spain
---------------	--	---

	Room 1 Sala Prat de la Riba	
12:15 – 13:00	Keynote Lecture: KN 03 Advancing Chemistry Education Research: Dual-Process Theories, Learning Objects and Student Response Systems	Murat Kahveci Canakkale Onsekiz Mart University Turkey

	Room 2 Sala Pere i Joan Coromines	
12:15 – 13:00	Chemical Demonstration: CD 01 Nanotechnology experiments for general chemistry laboratory classes	David Katz Pima Community College, Arizona United States

13:10 – 14:10 Lunch (Ground floor)

	Room 1 Sala Prat de la Riba	
14:15 – 15:30	OC 1.1 Symposium: Towards more relevant Chemistry Education (S 01 - S 04)	Chairs: Ingo Eilks, University of Bremen, Germany and Avi Hofstein The Weizmann Institute of Science, Israel
	S 01 Towards Eco-Reflexive And Transformative Learning In Chemistry Education.	Jesper Sjöström, Malmö University Sweden
	S 02 Medicines In My Life: An Authentic Contextualized Module For Pupils And Teachers	Sarah M. Hayes, University of Limerick Ireland
	S 03 From Students' Chemistry Interest In Internet Forums To Classroom Practice.	Johanna Dittmar and Ingo Eilks, University of Bremen Germany
	S 04 Directions And Obstacles Regarding Research, Development, and Practice for Relevant Chemistry Education	Avi Hofstein, The Weizmann Institute of Science and Ingo Eilks, University of Bremen Israel and Germany

	Room 2 Sala Pere i Joan Coromines	
14:15 – 15:30	OC 1.2 Oral Communications (OC 01 – OC 05)	Chair: LEMONIA Antonoglou, Aristotele University of Thessaloniki, Greece
	OC 01 Investigating And Mitigating Chemistry Students' Illusions Of Competence	Pazicni, Sam (1) (1) University Of New Hampshire United States
	OC 02 Using Reflections To Promote Metacognitive Awareness In Students' Conceptual Understanding And Problem Solving Abilities In Chemistry	Dianovsky, Michael (1) (1) South Dakota State University United States

OC 03 Feedback In Blended Learning Laboratory Classes As A Way To Improve Success Of Student Teachers	Hedtrich, Sebastian (1) Graulich, Nicole (1) <i>(1) Justus-Liebig-University</i>	Germany
OC 04 Theater In Chemistry Education: Analysis Of An Experience At The University Of Valencia.	Pou Amérigo, Rosendo (1); Climent, Teresa (1); García Lopera, Rosa (1); Piñana, Estefania (1); Colorado, Inmaculada (1); <i>(1) University Of Valencia</i>	Spain
OC 05 The Investigation Of Pre-Service Elementary Science Teachers' Interest In Acid-Base	Çiçek, Ozge (1); İlhan, Nail (1) <i>Kilis 7 Aralık University (1)</i>	Turkey

Room 3 Sala Pere i Joan Coromines

14:15 – 15:30	OC 1.3 Oral Communications (OC 06 – OC 09)	Chair: Pere Grapi, Societat Catalana d'Història de la Ciència i de la Tècnica, IEC, Spain
	OC 06 Progress In Primary School Children's Understandings Of Dissolving: A Cross-Age Qualitative Survey	Tsapali, Maria (1); Quinn, Connor (1); Ellefson, Michelle R. (1); Schlottmann, Anne; Taber, Keith S. (1) <i>(1) University of Cambridge</i>
	OC 07 The Quest To Design Effective Visualizations	Kelly, Resa (1) <i>(1) San José State University</i>
	OC 08 Graphical Representations In Electrochemistry - Do They Relieve Some Difficulties?	Eriksson, Lars (1); Kaufmann, Ilana (1) <i>(1) Stockholm University</i>
	OC 09 Finnish Subject Teachers' Perceptions Of Art Integration In Chemistry Education	Turkka, Jaakko (1); Aksela, Maija (1) <i>(1) University of Helsinki</i>

Poster Communications PC1 (Cloister – 1st Floor)

15:35 – 16:20	Poster Communications PC1 (P1-P30) (see the lists at the end of program)	List of PC1.2: Presentation by the authors (P16-P30) Chair: Àngel Messeguer, IQAC-CSIC, Spain
---------------	--	---

16:25 – 16:55 Coffee Break – Cloister (Ground floor)

Room 1 Sala Prat de la Riba

17:00 – 17:45	Keynote Lecture: KN 04 An Instructional Framework for Transforming Authentic Practices into Contexts for the outline of Chemistry Curricula	Astrid Bulte	University of Utrecht Germany
---------------	--	--------------	----------------------------------

Room 2 Sala Pere i Joan Coromines

17:00 – 17:45	Chemical Demonstration: CD 02 From alchemists to catalysts through experiments you can do in the classroom	Josep Duran	University of Girona Spain
---------------	---	-------------	-------------------------------

Room 1 Sala Prat de la Riba

17:50 – 18:50	OC 2.1 Oral Communications (OC 10 – OC 13)	Chair: Klemens Koch, Pedagogical University Berne, Switzerland
	OC 10 The Investigation Of Pre-Service Teachers' Self-Efficacy Perceptions On Acid-Base Topic	Çiçek, Ozge (1); İlhan, Nail (1) <i>(1) Kilis 7 Aralık University</i>
	OC 11 Measuring Aspects Of Students' Motivation Towards Learning Chemistry	Skorsepa, Marek (1); Kmetova, Jarmila (1) <i>(1) Matej Bel University</i>
	OC 12 "On-Line Continuous Assessment" - What Do Students Think?	O' Malley, Pat (1); Finlayson, Odilla (1) <i>(1) Dublin City University</i>
	OC 13 The Magic Of The Periodic Table: From Illusion To Game	Duran Carpintero, Josep (1); Vieta, Pep Anton (1); Duran, Miquel (1); Blasco, Fernando; Guillaumes, Laia; Simon, Silvia (1) <i>(1) Universitat de Girona</i>

Room 2 Sala Pere i Joan Coromines

17:50 – 18:50	OC 2.2 Oral Communications (OC 14 – OC 17)	Chair: Karolina Broman, Umea University, Sweden
	OC 14 Chemical Activity-Based Teaching Materials At Compulsory Secondary School: Results Of Classroom Implementation	Izquierdo Aymerich, Merce (1); Aliberas, Joan (1); Guitart Mas, Fina <i>(1) Universitat Autònoma de Barcelona</i>
	OC 15 Investigating and Evaluating Outreach and Public Engagement Programmes, to establish whether they can Improve/Enhance Scientific Literacy	Hayes, Sarah (1); Ryan, Laurie (1); Childs, Peter (1); Croker, Denise (1) <i>(1) University of Limerick</i>
	OC 16 Longitudinal Study Of Students' Conceptual Structures Concerning Chemical Bonding From Middle School To Upper Secondary School	Joki, Jarkko (1); Aksela, Maija (1) <i>(1) University of Helsinki</i>

OC 17 Chemical Names And Formulas: French Students' difficulties	Kermen, Isabelle (1) ; Canac, Sophie (1); (1) <i>University of Paris-Est Créteil</i>	France
---	---	--------

Room 3 Sala Nicolau d'Olwer

17:50 – 18:50	OC 2.3 Oral Communications (OC 18 – OC 21)	Chair: Jan Reguli, Trnava University, Slovakia	
	OC 18 Effect of course redesign on student learning in an introductory chemistry course	Raje, Sonali (1) (1) <i>Towson University</i>	United States
	OC 19 Analysis of how chemical knowledge is transferred in context-based education: students' difficulties and ways of reasoning	Marchan, Ivan (1); Sanmarti, Neus (1) (1) <i>Universitat Autònoma de Barcelona</i>	Spain
	OC 20 Parents and students cooperatively experiencing chemistry	Silvija, Markic (1) (1) <i>University of Bremen</i>	Germany
	OC 21 Adapting Participatory Action Research for Developing Chemistry Student Teachers' Diagnostic Knowledge	Tolsdorf, Yannik (1); Silvija, Markic (1) (1) <i>University of Bremen</i>	Germany

20:45 – 23:15

WELCOME CEREMONY - MUSEU NACIONAL D'ART DE CATALUNYA (MNAC)

Thursday 8th September

Room 1 Sala Prat de la Riba / Room 2 Sala Pere i Joan Coromines

8:30 – 09:25	Plenary Lecture: PL 02 Learning science through contemporary research vs. using a historical approach	Rachel Mamlok-Naaman and Ron Blonder	The Weizmann Institute of Science Israel
--------------	--	---	--

Room 1 Sala Prat de la Riba

9:30 – 10:15	Keynote Lecture: KN 05 How to transform the learning of chemistry into relevant education	Ingo Eilks	University of Bremen Germany
--------------	--	------------	---------------------------------

Room 2 Sala Pere i Joan Coromines

9:30 – 10:15	Keynote Lecture: KN 06 Studying Student Behavior and Chemistry Skills Using Browser-based Tools	Norbert Pienta	University of Georgia United States
--------------	--	----------------	--

10:15 – 10:45 Coffee Break – Cloister (Ground floor)

Room 1 Sala Prat de la Riba

10:50 – 11:35	Keynote Lecture: KN 07 Inquiry based learning: some results of research in Chemistry education in Portugal	Cecília Galvão	University of Lisbon Portugal
---------------	---	----------------	----------------------------------

Room 2 Sala Pere i Joan Coromines

	Chemical Demonstration: CD 03 Inquiring energy through simple experiments: a differentiation of concepts to strengthen energy literacy	Klemens Koch	Pedagogical University of Berne, Switzerland
--	---	--------------	---

11:40 – 12:25	OC 3.1 Oral Communications (OC 22 – OC 24)	Chair: Hana Ctrnactova,, Charles University, Czech R.	
	OC 22 Small Children's Non-Formal Chemistry Education Virtually At Homes' Parent's Needs For Support	Vartiainen, Jenni (1); Aksela, Maija (1) (1) University of Helsinki	Finland
	OC 23 Multimedia in Chemistry teaching in Portugal: a review of recent research	Paiva, João Carlos (1); Morais, Carla (1); Moreira, Luciano (1) (1) Universidade do Porto	Portugal
	OC 24 A Design-Based Research: Student-Centered Chemistry Education Through The Use Of Students' Questions	Herranen, Jaana (1); Aksela, Maija (1) (1) University of Helsinki	Finland

11:40 – 12:25	OC 3.2 Oral Communications (OC 25 – OC 27)	Chair: Miia Rannikmae, University of Tartu, Estonia	
	OC 25 Chemistry In Context: A Curricular Project For High School Education. Strengths And Weaknesses From Teachers' And Students' Feedback.	Guitart Mas, Fina (1); Corominas Viñas, Josep (1) CESIRE. Education Department. Catalonia's Government	Spain
	OC 26 Context And Topic ¿ Which Aspects Of Context-Based Chemistry Problems Do Upper Secondary Students Perceive Most Relevant And Interesting?	Broman, Karolina (1); Bernholt, Sascha; Parchmann, Ilka (2) Umeå University	Sweden
	OC 27 Using Active Learning In The Classroom: Teacher And Student Experiences	Teuling, Eva (1); Apotheker, Jan (1) (1) Rijksuniversiteit Groningen	The Netherlands

Room 3 Sala Nicolau d'Olwer

11:40 – 12:25	OC 3.3 Oral Communications (OC 28 – OC 30)	Chair: Mariann Holmberg, Arcada University Of Applied Sciences, Finland	
	OC 28 Food Science Students' Understanding Of Chemical Kinetics	Habiddin, Habiddin (1); Page, Elizabeth (1) (1) University of Reading	United Kingdom
	OC 29 Investigations For Pre-Service Chemistry Teachers	Maciejowska, Iwona (1); Finlayson, Odilla (1) Jagiellonian University	Poland
	OC 30 Foundation Year Medical Student Perspectives Of An Inquiry Based Chemistry Programme - Pogil (Process Oriented Guided Inquiry Learning).	Gaynor, Declan (1) (1) Royal College of Surgeons in Ireland Medical University of Bahrain	Bahrain

12:30 – 13:05 Optional Guided tour of the Venue Building or Academy of Medicine - (Optional, see for inscription in Social Events)
13:10 – 14:10 Lunch (Ground floor)

Room 1 Sala Prat de la Riba

14:15 – 15:30	OC 4.1 Symposium: Teacher Training made irresistible (S 05 – S 08)	Chair: Sevil Akaygun, Bogazici University, Turkey	
	S 05 Understanding Responsible Research And Innovation: Perspective Of Teachers	Jesper Sjöström / Sevil Akaygunand Emine Malmö University / Adadan, Bogazici University	Sweden / Turkey
	S 06 Science Teachers' Training In Implementing Cutting-Edge Research Topics In Science Classes.	Katerina Salta, Emily Michailidi And Dimitris Stavrou. University Of Crete	Greece
	S 07 The Use Of A Community Of Learners As A Professionalization Tool	Iwona Maciejowska, Malgorzata Kzeckowska. Jagiellonian University	Krakow
	S 08 Teachers' Concern Profiles In Teaching Responsible Research And Innovation.	Miikka De Vocht, Antti Laherto, And Ilka Parchamann, University Of Helsinki / University Of Kiel	Finland / Germany

Room 2 Sala Pere i Joan Coromines

14:15 – 15:30	OC 4.2 Oral Communications (OC 31 – OC 35)	Chair: Peter Childs, University of Limerick, Ireland	
	OC 31 Labdog: A Novel Web-Technology To Enhance Learning In The Lab.	Wilson, Thomas (1); Read, David (1) (1) University of Southampton	United Kingdom
	OC 32 "Creating Creativity": Improving Pre-Service Teachers' Conceptions About Creativity In Chemistry	Reiners, Christiane S. (1); Bliersbach, Markus (1) (1) University of Cologne	Germany
	OC 33 Biology And Chemistry Preservice Teachers' Opinions Towards The Nature Of Science (Nos)	Gul, Seyda (1); Ozay Kose, Esra (1); Sozblir, Mustafa (1) (1) Ataturk University	Turkey
	OC 34 A Study Of The Perception Of Chemistry In Young Generations And Of Their Chemical/Scientific Knowledge In Italy	Domenici, Valentina (1); Chiocca, Giulia (1) (1) Università di Pisa	Italy
	OC 35 What Is Chemistry Today? Analyzing The Image Of Chemistry From Twitter Messages	Cuadros, Jordi (1); Guerris Larruy, Manuel (1); González-Sabaté, Lucinio (1) (1) IQS-Universitat Ramon Llull	Spain

Room 3 Sala Nicolau d'Olwer

14:15 – 15:30	OC 4.3 Oral Communications (OC 36 – OC 40)	Chair: Mustafa Sozbilir, Atatürk University, Turkey	
	OC 36 How Do Students' Interest And Conceptual Understanding Develop Over The Time Of Their Secondary Chemistry Education? First Results From The Binational Project DoLIS	Bernholt, Sascha (1); Blankenburg, Janet (1); Broman, Karolina; Parchmann, Ilka (1) (1) Kiel University	Germany
	OC 37 Promoting Understanding Over Rote Learning: Self-Assessment In Mechanistic Organic Chemistry	Barnes, Stephen (1); Read, David (1) (1) University of Southampton	United Kingdom
	OC 38 Application Of Three-Tier Test To Assess Students' Misconceptions About Lipids	Milenkovic, Dusika (1); Hrin, Tamara (1); Segedinac, Mirjana (1); Horvat, Saša (1) (1) University of Novi Sad	Serbia
	OC 39 Designing Scaffolds To Teach Chemical Bonding Through Laboratory Inquiry	Crujeiras-Pérez, Beatriz (1) (1) University of Santiago de Compostela	Spain
	OC 40 Characterizing The Link Between Chemical Identity Thinking And Biochemical Contexts	Ngai, Courtney (1); Sevian, Hannah (1) (1) University of Massachusetts Boston	United States

Room 1 Sala Prat de la Riba

15:35 – 16:50	OC 5.1 Oral Communications (OC 41 – OC 45)	Chair: Iwona Maciejowska, Jagiellonian University, Poland	
	OC 41 Primary School Students In Chemistry Laboratory: Inquiry, Learning And Experience In Authentic Environment.	Häkkinen, Pirjo (1); Lundell, Jan (1) (1) University of Jyväskylä	Finland
	OC 42 Chemistry Lab-Centered Activities For 6-10 Years Old Children At The Science Museum.	Domenici, Valentina (1); Gerardi, Chiara; Parri, Erica; Lenzi, Alessandro (1) Università di Pisa	Italy
	OC 43 Engaging Pre-Service Primary Teachers In Scientific Practices: Planning An Investigation And Communicating Results	Crujeiras Pérez, Beatriz (1) (1) Universidade de Santiago de Compostela	Spain
	OC 44 Chemistry by inquiry for initial teacher education	Hinch, Leeanne (1); Finlayson, Odilla (1); McLoughlin, Eilish (1); Van Kampen, Paul (1) (1) CASTEL, Dublin City University	Ireland
	OC 45 How French Students Use The Language Of Chemistry	Kermen, Isabelle (1); Canac, Sophie (1) (1) University of Paris-Est Créteil	France

Room 2 Sala Pere i Joan Coromines

15:35 – 16:50	OC 5.2 Oral Communications (OC 46 – OC 50)	Chair: Josep Duran, University of Girona, Spain	
	OC 46 What Makes A Successful Chemistry School?	Childs, Peter (1); Waldron, Lisa (1); McCarthy, Megan (1) (1) University of Limerick	Ireland

OC 47 Secondary School Students' Perceptions Of Working Life Skills In Science-Related Careers	Keinonen, Tuula (1); Hartikainen Ahia, Anu (1); Salonen, Anssi (1)(1) <i>University of Eastern Finland</i>	Finland
OC 48 Evaluating Scenarios Which Promote Student's Science Related Career Awareness - An Estonian Experience In Multico Project.	Rannikmäe, Miia (1); Holbrook, Jack (1); Soobard, Regina (1); Kotkas, Tormi (1) (1) <i>University of Tartu</i>	Estonia
OC 49 3d Printing For Chemistry. How We Do It?	Šmejkal, Petr (1); Míka, Ludík (1); Ètrnáctová, Hana (1); Martínek, Václav (1) (1) <i>Charles University in Prague</i>	Czech Republic
OC 50 Triadic Dialog Interactions In Chemistry Learning Facebook Group	Blonder, Ron (1); Rap, Shelley (1) (1) <i>Weizmann Institute of Science</i>	Israel

Room 3 Sala Nicolau d'Olwer

15:35 – 16:50	OC 5.3 Oral Communications (OC 51 – OC 55)	Chair: May Britt Stjerna, Norwegian Chemical Society, Norway	
	OC 51 Drama For Inclusion In Science: Recognising The Role Of Artisan Input.	Oversby, John (1) (1) <i>University of Reading</i>	Wales
	OC 52 Sneaking The History Of Science Through Its Images In Science Teacher Education. The Case Of The Pneumatic Trough	Pere Grapí (1) <i>Universitat Autònoma de Barcelona</i>	Spain
	OC 53 History Of Chemistry And Nature Of Science: What Do These Mean To Chemistry Teachers	Milanovic, Vesna (1); Trivic, Dragica (1) (1) <i>University of Belgrade</i>	Serbia
	OC 54 Towards Relevant Integrated Chemistry Education	Haatainen , Outi (1); Maija Aksela, (1) (1) <i>University of Helsinki</i>	Finland
	OC 55 Students' Understanding Of Heat And Temperature: A Cross-Age Study	Yavuzkaya, Merve Nur (1); Adadan, Emine (1) (1) <i>Bogazici University</i>	Turkey

16:55 – 17:25 Coffee Break – Cloister (Ground floor)

Room 1 Sala Prat de la Riba

17:30 – 18:15	WS 01 Workshop (OPTIONAL) Quality publishing in chemical educations journals	Norbert Pienta (1) and Ingo Eilks (2) (1) University of Georgia (2) University of Bremen	United States and Germany
---------------	--	--	---------------------------

Friday 9th September

Room 1 Sala Prat de la Riba / Room 2 Sala Pere i Joan Coromines

8:30 – 09:25	Plenary Lecture: PL 03 How to engage students in and for science? Perspectives for school and out-of-school learning	Ilka Parchmann	Kiel University Germany
--------------	---	----------------	----------------------------

Room 1 Sala Prat de la Riba

9:30 – 10:15	Keynote Lecture: KN 08 Undergraduate Chemistry Laboratory: Goals and Novel Assessments	Marcy Towns	Purdue University, Indiana United States
--------------	---	-------------	---

Room 2 Sala Pere i Joan Coromines

9:30 – 10:15	Keynote Lecture: KN 09 Promoting holistic sustainable development through chemistry teacher education	Maija Aksela	University of Helsinki Finland
--------------	--	--------------	-----------------------------------

10:15 – 10:45

Coffee Break – Cloister (Ground floor)

 Cloister – 1st Floor

10:50 – 11:35	Poster Communications PC 2 (P31-P58) (see the lists at the end of program)	List of PC2.1: Presentation by the authors (P31-P43) Chair: Aureli Caamaño, Societat Catalana de Química, IEC, Spain
---------------	--	--

Room 1 Sala Prat de la Riba

11:40 – 12:25	Keynote Lecture: KN 10 Virtual and Real Environments Interaction in Chemistry Education	Martin Bílek	University of Hradec Králové Czech Republic
---------------	--	--------------	--

Room 2 Sala Pere i Joan Coromines

11:40 – 12:25	Chemical Demonstration: CD 04 “In a little you can see a lot” : The impact of practical microscale chemistry on chemical education	Robert Worley	Brunel University Science Park United Kingdom
---------------	---	---------------	--

12:30 – 13:05

Optional Guided tour of the venue building or Academy of Medicine - (Optional, see for inscription in Social Events)

13:10 – 14:10

Lunch (Ground floor)

Room 1 Sala Prat de la Riba

14:15 – 15:45	OC 6.1 Symposium: The IRRESISTIBLE way to engage school students with RRI (S 9 – S 13)	Chair: Jan Apotheker, University of Groningen, The Netherlands	
	S 9 The Project Irresistible: Introducing Responsible Research and Innovation into the Secondary School Classroom.	Jan Apotheker, <i>University Of Groningen</i>	The Netherlands
	S 10 The Rationale Of Responsible Research And Innovation (Rri) In Science Education.	Ron Blonder, Shelley And Sherman Rosenfeld, <i>Weizmann Institute Of Science</i>	Israel
	S 11 Irresistible Exhibitions On Responsible Research And Innovation: The Impact Of The Process Of Exhibition Development On Both Students And Teachers.	Rita Marques, Patrícia Azinhaga, Pedro Reis, Elisabete Linhares And Mónica Baptista, <i>Lisbon University</i>	Portugal
	S 12 Exploring Students’ Motivation While Creating A Student Curated Exhibition.	Lorenz Kampschulte, Daniela Ingwersen, And Ilka Parchmann. <i>Leibniz Institute For Science And Mathematics Education</i>	Germany
	S 13 Exploring Students’ Attitudes Toward Responsible Research And Innovation In The Context Of Nanotechnology Applications Module	Emine Adadan, Sevil Akaygun, <i>Bogazici University</i>	Turkey

Room 2 Sala Pere i Joan Coromines

14:15 – 15:45	OC 6.2 Oral Communications (OC 56 – OC 61)	Chair: Rachel Mamluk-Naaman, The Weismann Institute, Israel	
	OC 56 The Tip Of The Iceberg In Organic Chemistry Classes	Graulich, Nicole (1) <i>(1) Justus-Liebig Universität Gießen</i>	Germany
	OC 57 Organic Light Emitting Diodes -Implementing An Innovative Technology Into Chemistry Classes.	Dörschellin, Jennifer (1); Banerji, Amitabh (1) <i>(1) University of Cologne</i>	Germany

OC 58 A Comparative Study On Presentation Of Le Châtelier's Principle (LCP) In High School Chemistry Textbooks In Spain And Turkey	Quílez, Juan (1); Canpolat, Nurtac; Sözbilir, Mustafa; Pinarbasi, Tacettin (1) <i>Universitat Jaume I. Castelló de la Plana</i>	Spain
OC 59 Conceptual And Inclusive Chemistry Learning - A Contradiction	Abels, Simone (1) (1) <i>Leuphana University Lüneburg</i>	Germany
OC 60 Pre-Service Primary School Teachers' Understanding Of Chemical Bond At The Submicroscopic Level	Devetak, Iztok (1); Slapničar, Miha (1) (1) <i>University of Ljubljana</i>	Slovenia
OC 61 Is Avogadro Number An Irrational Number?	Libran, Antoni (1); Izquierdo, Mercè (1) (1) <i>Universitat Autònoma de Barcelona</i>	Spain

Room 3 Sala Nicolau d'Olwer

14:15 – 15:45	OC 6.3 Oral Communications (OC 62 – OC 67)	Chair: Ilka Parchmann, Kiel University, Germany	
	OC 62 Chemistry Teachers' Views Of ChemistryLab Gadolin As A Meaningful Nonformal Learning Environment	Ikävalko, Veli-Matti (1); Aksela, Maija (1) (1) <i>University of Helsinki</i>	Finland
	OC 63 Fostering Positive Attitudes Towards Science And Chemistry: What Needs To Change In The Classroom?	Duckmanton, Paul (1); Koramoah, Rachel (1); Read, David (1) (1) <i>University of Southampton</i>	United Kingdom
	OC 64 Evidences Of The Relationship Between Recreational Chemistry And The Increase Of Chemical Vocations	Duran Carpintero, Josep (1); Vieta Corcoy, Pep Anton (1); Duran Portas, Miquel (1) (1) <i>Universitat de Girona</i>	Spain
	OC 65 The Role Of Non-Formal Chemistry Learning Environments For Curriculum Design And Innovation	Affeldt, Fiona (1); Antje Siol (1); Silviya Markic (1); Ingo Eilk (1) (1) <i>University of Bremen</i>	Germany
	OC 66 Understanding The Differences In The Chemistry Learning Environments In New Zealand High Schools And Universities.	Boniface, Suzanne (1) (1) <i>Victoria University of Wellington</i>	New Zealand
	OC 67 Interactive Whiteboards For Teaching Chemistry And Resulting Tensions Of Their Use	Grimalt-Álvaro, Carme (1); Ametller, Jaume; Pintó, Roser (1) (1) <i>CRECIM</i>	Spain

Poster Communications PC2 (Cloister – 1st Floor)

15:50 – 16:35	Poster Communications PC 2 (P31-P58) (see the lists at the end of program)	List of PC2.2: Presentation by the authors (P44-P58) Chair: Gabriel Pinto, Universidad Politécnica de Madrid, Spain	
---------------	--	---	--

16:40 – 17:10 Coffee Break – Cloister (Ground floor)

Room 1 Sala Prat de la Riba

17:10 – 17:55	Keynote Lecture: KN 11 The development of pre-service chemistry teachers' pedagogical content knowledge through research activities	Dragica Trivic	University of Belgrade Serbia
---------------	--	----------------	----------------------------------

Room 2 Sala Pere i Joan Coromines

17:10 – 17:55	Chemical Demonstration: CD 05 APQUA Project: 25 years of integrated inquiry-based, issue-oriented and hands-on science education in grades 4-11	Carles Lozano	University Rovira i Virgili Spain
---------------	--	---------------	--------------------------------------

Room 1 Sala Prat de la Riba

18:00 – 19:15	OC 7.1 Oral Communications (OC 68 – OC 72)	Chair: Jordi Cuadros, IQS Univ. Ramon Llull	
	OC 68 Learning Higher-Order Thinking Skills In General Chemistry: Using The "ChemEd X Data" Website To Teach Students Self-Regulation.	Prat-Resina, Xavier (1) (1) <i>University of Minnesota Rochester</i>	United States
	OC 69 Mapping Students' Understanding Ashok Of Hydrogen Bonding	Akaygun, Sevil (1); Lundell, Jan (1) <i>Bogazici University</i>	Turkey
	OC 70 Tailoring E-Learning Environment For Chemistry Education	Ahokas, Jussi (1); Koliseva, Anniina (1); Pyykkö, Lassi (1); Lundell, Jan (1) (1) <i>University of Jyväskylä</i>	Finland
	OC 71 Informing Teaching Practices By Investigating Undergraduate Chemistry Students- Online Homework Usage	Gulacar, Ozcan (1); Bowman, Charles (1) <i>University of California-Davis</i>	United States
	OC 72 Science Teachers' Experiences About Guiding Students Along The Development Of An Interactive Science Exhibition Artifacts.	Açikel, Büsra (1); Akaygun, Sevil (1); Adadan, Emine (1) (1) <i>Bogazici University</i>	Turkey

Room 2 Sala Pere i Joan Coromines

18:00 – 19:15	OC 7.2 Oral Communications (OC 73 – OC 77)	Chair: Jan Apotheker University Of Groningen, The Netherlands	
	OC 73 Experimenting With Ice: Suggestions For Active Inquiry-Based Learning Of Science And STEM Competences	Pinto, Gabriel (1); Lahuerta, Pascual; Martín Sánchez, Manuela; Martín Sánchez, María Teresa (1) <i>Universidad Politécnica de Madrid</i>	Spain

OC 74 Possibilities For Chemistry Education Provided By Scientix And STEM Alliance	Mihai, Gina (1); Debry, Maïté (1) Gras-Velázquez, Àgueda (1) <i>(1) European Schoolnet</i>	Belgium
OC 75 Inquiry-Based Learning As A Predictor Of Adolescents' Science-Related Career Aspiration	Kang, Jingoo (1); Keinonen, Tuula (1) <i>(1) University of Eastern Finland</i>	Finland
OC 76 Chemistry Teachers' Training As The Most Important Condition For IBSE Teaching	Čtrnáctová, Hana (1); Teplá, Milada (1); Čtrnáctová, Lenka (1); Stratilová Urválková, Eva (1); Šmejkal, Petr (1) <i>(1) Charles University in Prague</i>	Czech Republic
OC 77 Education Through Science As An Approach To Make Chemistry Education Relevant In The Eyes Of Students	Rannikmäwe, Miiia (1); Holbrook, Jack (1) <i>(1) University of Tartu</i>	Estonia

Room 3 Sala Nicolau d'Olwer

18:00 – 19:15

OC 7.3 Oral Communications (OC 78 – OC 82)	Chair: Odilla Finlayson, Dublin City University, Ireland	
OC 78 Teachers' Misconceptions About Reaction Rate And Acid-Base Chemistry	Cheung, Derek (1) <i>(1) The Chinese University of Hong Kong</i>	China
OC 79 (Re)Construction Of Students' Conceptions About Chemical Equilibrium By Peer-Led Team Learning	Reguli, Ján (1); Čičmanská, Lenka (1) <i>(1) Trnava University</i>	Slovakia
OC 80 Everyday Analogies To Understand The Concept Of Aromaticity	Simon, Silvia (1); Duran, Miquel (1); Solà, Miquel (1) <i>(1) University of Girona</i>	Spain
OC 81 Enhancing Teacher Learning Using Solo Taxonomy	Tomperi, Päivi (1); Aksela, Maija (1) <i>(1) University of Helsinki</i>	Finland
OC 82 Welcome-Science – Introduction For Refugee-Children In Language And Science	Lück, Gisela (1) <i>(1) Bielefeld University</i>	Germany

20:45 – 23:15

CONFERENCE DINNER. RESTAURANT MUSEU HISTÒRIA DE CATALUNYA

Saturday 10th September

Room 1 Sala Prat de la Riba / Room 2 Sala Pere i Joan Coromines			
08:40 – 09:35	Plenary Lecture: PL 04 Inquiry and its Assessment – Lessons from Research and Practice	Odilla Finlayson	Dublin City University Ireland
Room 1 Sala Prat de la Riba			
09:40 – 10:55	OC 8.1 Symposium Language and Chemistry Teaching and Learning (S 14 –S 17)	Chairs: Silvija Markic, University of Bremen, Germany and Peter E. Childs, University of Limerick, Ireland.	
	S 14 LISP: the Language in Science Project	Peter Childs, <i>University of Limerick</i> and Marie Ryan, <i>Our Lady's Secondary School</i>	Ireland
	S 15 Tertiary Chemistry Students' Understanding of language Items used in Chemistry Instruction.	Roko Vladusic and Mia Ozicwona <i>University of Split</i> ; Robert Bucat; <i>The University of Estern Australia</i>	Croatia Australia Croatia
	S 16 Write on the Edge: Using a Chemistry Corpus to Develop Academic Writing Skills Resources for Undergraduate Chemists.	Jacque Robson, Megan Bruce, Philippa Coffee and Simon Rees, <i>Durham University</i>	UK
	S 17 Chemistry Teachers pedagogical scientific language knowledge	Silvija Markic, <i>University of Bremen</i>	Germany
Room 2 Sala Pere i Joan Coromines			
09:40 – 10:55	OC 8.2 Oral Communications (OC 83 – OC 87)	Chair: Dragica Trivic, University of Belgrade, Serbia	
	OC 83 Assessing Students' Progress In The Virtual Lab Using Trace Files And Rule-Based Analysis.	Cuadros, Jordi (1); Martori, Francesc (1) <i>(1) IQS Univ. Ramon Llull</i>	Spain
	OC 84 Exploring Efficiency Of Systemically-Oriented Instruction In Chemistry Classroom: The 3-Dimensional Approach	Hrin, Tamara (1); Milenković, Dušica (1) Segedinac, Mirjana (1); Horvat, Saša (1); Đekić, Jelica <i>(1) Faculty of Sciences, University of Novi Sad</i>	Serbia
	OC 85 Zero Chemistry MOOC: Building Bridges Towards University	Simon, Silvia (1); Duran, Josep (1); Guillaumes, Laia (1); Vieta, Josep Anotn (1); Rodríguez, Montse (1); Rafel, Sara; Heras, Montse (1); Duran, Miquel (1); <i>(1) Universitat de Girona</i>	Spain
	OC 86 Developing And Implementing Protocols In Quality Assurance To Enhance Educational Development In Tertiary Chemistry Education	Dolfing, Ria (1), Apotheker, J (1) <i>(1) University of Groningen</i>	The Netherlands
	OC 87 A Pedagogical Framework For Graduate Teaching Assistants To Promote Meaningful Learning In The General Chemistry Laboratory	Flaherty, Aishling (1); O'Dwyer, Anne (1); Erduran, Sibel (1) <i>(1) University of Limerick</i>	Ireland
Room 3 Sala Nicolau d'Olwer			
09:40 – 10:55	OC 8.3 Oral Communications (OC 88 – OC 92)	Chair: Jan Lundell, University of Jyväskylä, Finland	
	OC 88 Real-time experiments to enhance Chemistry Competencies in Secondary. What does it make the difference?	Tortosa Moreno, Montserrat (1); Skorsepa, Marek; Smejkal, Petr ; Urban-Woldron, Hildegard; Guitart, Fina; Aksela, Maija; Stratilová-Urvalková, Eva; Tolvanen, Simo <i>(1) INS Sabadell</i>	Spain
	OC 89 MBL inquiry experiments to enhance science skills and chemistry competencies at secondary school: Practice and research results	Guitart Mas, Fina (1); Artigas Oliveras, Carme; Tortosa Moreno, Montserrat <i>(1) University of Barcelona and CESIRE Departament of Education</i>	Spain
	OC 90 Professionalization Of Future Chemistry Teachers For Teaching In Inclusive Classes	Melle, Insa (1); Schlueter, Ann-Kathrin (1) <i>(1) TU Dortmund University</i>	Germany
	OC 91 Inclusion In Chemistry Education In Secondary School	Melle, Insa (1); Michna, Dagmar (1) <i>(1) TU Dortmund University</i>	Germany
OC 92 A Trail Over Conceptual Stepping Stones: Ancient Technologies And Models In Introductory Chemistry Course For 6-7 Grades	Vysotskaya, Elena (1); Khrebtova, Svetlana; Rekhman, Iya <i>(1) Psychological Institute of the Russian Academy of Education, Moscow</i>	Russia	

11:00 – 11:30 Coffee Break – Cloister (Ground floor)

BUS DEPARTURE TO COSMOCAIXA SCIENCE MUSEUM (11:30 h)

Sala Àgora COSMOCAIXA Science Museum

12:30 – 13:25

Plenary Lecture:
PL 05 Evidence-Based Approaches to Curriculum Reform and Assessment

Melanie M Cooper

Michigan State University
 United States

Sala Àgora COSMOCAIXA Science Museum

13:25 – 14:00

CLOSING CEREMONY

14:00 – 14:30

Farewell Appetizer at COSMOCAIXA

15:30 – 16:30

Guided tours to COSMOCAIXA Science Museum or Planetarium - (Optional, see for inscription in Social Events)

POSTER COMMUNICATIONS

Poster Communications PC1 (Cloister – 1st Floor) Wednesday 7th September (hung all day) (P1-P30)

11:25 h -12:10 h (presentations of PC1.1 (P1-P15) and 15:35 h – 16:20 h (presentations of PC1.2 P16-P30)

Poster Communications PC1	List of PC1.1: Presentation by the authors (11:25 h -12:10 h) Chair: Consol Blanch, Universitat de Vic, Spain		
Group Exam As A Form Of Assessment	P1	Koliseva, Anniina (1); Matilainen, Rose (1) (1) University of Jyväskylä	Finland
H. E. Armstrong (1848-1937): the forgotten pioneer of IBSE	P2	Peter E. Childs (1) (1) University of Limerick, Ireland	Ireland
Investigating Motivation To Learn Chemistry And Physics Among Students Of Tertiary Education	P3	Salta, Katerina (1); Koulougliotis, Dionysios (1) University of Crete	Greece
Learning Strategies Of Students In Relation To Learning Chemistry	P4	Kmetova, Jarmila (1); Skorsepa, Marek (1) (1) Matej Bel University	Slovakia
Meaningful First Year Experience Prevents Dropouts In Chemistry	P5	Valto, Piia (1), Kiviniemi, Tiina (1), Lundell, Jan (1) (1) University of Jyväskylä	Finland
Reconstruction Of University Level Analytical Chemistry Laboratory Course	P6	Välisaari, Jouni (1), Koliseva, Anniina (1), Valto, Piia (1), Matilainen, Rose (1) (1) University of Jyväskylä	Finland
Students As Participants In Curriculum Redesign: Development Of A Project Based Introductory Chemistry Laboratory Curriculum	P7	Lykourinou, Vaso (1); Lee-Parsons, Carolyn (1); de la Parra, John (1); Rovira, Alejandro (1) (1) Northeastern University	USA
Learning From Errors: New Strategies To Improve The Evaluation Of Equilibrium Constants	P8	Clotet Romeu, Anna (1); Mas, Elisenda (1); Reguero, Mar (1); Campanera, Josep M.; Carles Bo (1) (1) Universitat Rovira i Virgili	Spain
Developing And Implementing An Innovative Digital Template For Research And Design Projects In Academic Science Education	P9	Wolfs, Peter (1); Dolfing, Ria (1) (1) University of Groningen	The Netherlands
The Change Of Functionality - The Development Of Chemical Synthesis Since The Days Of Alchemy	P10	Frevert, Mareike (1) (1) University of Kassel	Germany
Turning Your Spreadsheet Into An Always Updated Chemistry Handbook	P11	Cuadros, Jordi (1) (1) IQS Univ. Ramon Llull	Spain
The Impact Of School Field Trip On Students' Environmental Awareness Towards Plastic Pollution	P12	Tagmay Yilmaz (1); Sevil Akaygun (1) Adapazarı ENKA High School	Turkey
Personal Construct Psychology (PCP) As A Theory To Inform A Proposed Model Of Learning	P13	Odilla E. Finlayson (1); Carr (1), Enda P.; Eilish McLoughlin (1) (1) School of Chemistry, Dublin City University	Ireland
Teaching Chemists Crystallography - Modern Or Obsolete?	P14	Lipkowski, Janusz (1) (1) Cardinal Stefan Wyszyński University in Warsaw	Poland
Exploring General Chemistry Students' Cognitive Abilities And Domain-Specific Skills In The Context Of Stoichiometry	P15	Gulacar, Ozcan (1); Eilks, Ingo; Bowman, Charles; Milkey, Alexandra (1) (1) University of California-Davis	USA

Poster Communications PC1	List of PC1.2: Presentation by the authors 15:35 h – 16:20 h Chair: Àngel Messeguer, IQAC-CSIC, Spain		
Monitoring Authentic Chemistry Problem Solving With The Eye-Tracking Method	P16	Devetak, Iztok (1); Slapnicar, Miha (1); Glažar, Saša Aleksij (1) (1) University of Ljubljana	Slovenia
Students' Focus On 2d And 3d Images Of Molecule Models When Solving Simple Chemical Task	P17	Devetak, Iztok (1); Svetičič, Špela (1); Torkar, Gregor (1) (1) University of Ljubljana	Slovenia
Contemporary Science In Chemistry Teacher Education - An Empirical Study	P18	Frevert, Mareike (1), Di Fuccia, David-Samuel (1) (1) University of Kassel	Germany
Primary School Teachers' Beliefs About Learning In Science And Their According Action In The Classroom	P19	Dunker, Nina Kim (1) (1) University of Bielefeld	Germany
School-University Partnership: A Potentiating Tool To Reflect On The Teaching Practice	P20	Mendes da Silva, Joaquim Fernando (1); Pinho, Gabriela; Lima, Maria Celiana; França, Mauro; Araújo, Sheila; Heidelmann, Stephany (1) (1) Federal University of Rio de Janeiro	Brasil
Professional Teaching Competencies And Didactical Models Of Beginning Teachers In Sciences.	P21	Jara Campos, Roxana (1); Morales Cisternas, Cecilia (1); Quiñones Herrera, Paola (1); Satlov Vega, Miriam (1) (1) Pontificia Universidad Católica de Valparaíso	Chile
Comparison Of Two Digestion Methods For The Analysis Of Metals In Different Sample Matrices By Chemistry Undergraduate Students.	P22	Oliva, Bessie (1); Véliz, Ricardo (1); Archila, Ilse (1); Marchorro, Iris (1) (1) University of San Carlos of Guatemala	Guatemala
Implementation Of An Experimental Procedure For The Extraction And Analysis Of Volatiles From A Guatemalan Aromatic Plant By Spme.	P23	Perez-Sabino, Francisco (1); Taracena, Edwin (1); Mérida-Reyes, Max (1); Hernández-Hernández, Elisandra (1) (1) University of San Carlos of Guatemala	Guatemala

"Locus: A Real Adventure": An Rpg (Role-Playing Game) As An Alternative Instrument To Promote Citizenship And Environmental Education	P24	Mendes da Silva, Joaquim Fernando (1); Vianna Francisco, Tatiana (1) (1) Federal University of Rio de Janeiro	Brasil
Synthesis Of Novel 2-Heterostyrylbenzimidazoles As Potential Anti-Tuberculosis Agents: A Scientific Approach	P25	Taduri, Ashok Kumar (1); Bhoomireddy, Rama Devi (1) (1) Jawaharlal Nehru Technological University Hyderabad	India
A Didactic Sequence To Explore Socioeconomic Issues Of Modern Africa In Chemistry Education	P26	Mendes da Silva Joaquim Fernando (1); Heidelmann, Stephany (1); Pinho, Gabriela (1) Federal University of Rio de Janeiro	Brasil
Integrating The Essential Nanoscale Science And Technology (Nst) Concepts In High School Chemistry Curricula In Israel	P27	Blonder, Ron (1); Sakhnini, Sohair (1) (1) Weizmann Institute of Science	Israel
Exploiting The Responsible Research And Innovation Dimensions In Science Education - Results Of The Engage Project	P28	Gorghiu, Laura Monica (1); Gabriel Gorghiu, (1); Mihai Bîzoi, (1) (1) Valahia University Targoviste	Romania
Cheminformatics Olcc: Teaching A Class On Cutting-Edge Digital Technologies Across Multiple Campuses	P29	Cuadros, Jordi (1) (1) IQS Univ. Ramon Llull	Spain
Discovering the liquid gold of the Mediterranean: A Chemometrical Approach to the study of olive oil	P30	Iris Carretero (1); Montserrat Mialet (1) (1) Col·legi Escorial. Vic	Spain

Poster Communications PC2 (Cloister – 1st Floor) Friday 9th September (hung all day) (P31-P58)

10:50 h – 11:35 h (presentations of PC2.1 (P31-P43) and **15:50 h – 16:35 h** (presentations of PC2.2 (P44-P58))

Poster Communications PC 2		List of PC2.1. Presentation by the authors 10:50 h – 11:35 h Chair: Aureli Caamaño, Societat Catalana de Química, IEC, Spain	
Introducing Inorganic Ions Qualitative Determination Tests In Lower-Secondary School Elective Course Experiments In Chemistry	P31	Devetak, Iztok (1); Založnik, Urša (1) (1) University of Ljubljana	Slovenia
The Atomic Force Microscope AFMone® As Clearly Arranged Self-activity Access To Nanomaterials In Teacher Education	P32	Goldhausen, Ines (1); Bode, Janina (1); Di Fuccia, David-S (1) (1) University of Kassel	Germany
Analysis And Reflection Of Different Learning Paths Towards Electro Chemistry	P33	Katharina Groß (1) (1) University of Cologne	Germany
Development and Validation of a Basic Chemistry Concept Inventory Assessing Secondary School Students	P34	Salta, Katerina (1); Antonoglou, LEMONIA; Vlacholia, Maria (1); Rousis, Petros (1); Kazi, Smaragda; Vosniadou, Stella (1); Sigalas, Michael; Zougaki, Thryssa (1) (1) National and Kapodistrian University of Athens	Greece
Chemie Im Kontext In Spain: The Adaptation Of A Context Bases Methodology For Chemistry Teaching	P35	Sánchez-Díaz, Ignacio (1); Di Fuccia, David-S. (1) (1) University of Kassel	Germany
The greenhouse effect through experimentation activities to develop the argumentation capacity	P36	Guerra, Antonio (1); Almeida, Caroline; Silva, Joaquim (1) Federal University of Rio de Janeiro	Brasil
Using Different Teaching Aids To Enhance Conceptual Development Of Students In A Chemistry Classroom	P37	Uamusse, Amália (1); Kuleshov, Tatiana (1) (1) Eduardo Mondlane University	Mozambique
Coal Power and acid rain: A COMBLAB activity to enhance chemistry competencies at secondary school	P38	Guitart Mas, Fina (1); Aguilera Juan, Tomás Luís; Franch Ventura, Pere; Mas Llorens, Montserrat; Rios Flor, Consuelo; Tortosa Moreno, Montserrat (1) CESIRE Departament d'Ensenyament and University of Barcelona	Spain
Real-time experiments to enhance Chemistry Competencies in Secondary: The most efficient home-made fire extinguisher	P39	Tortosa, Montserrat (1); Guitart, Fina; Artigas, Carme; Bofill, Sonia; Mas, Montserrat; Ramirez, Joan (1) INS Sabadell	Spain
Butterfly effect in a chemical oscillator	P40	Pilosu, Vittorio (1); Budroni, Marcello A. (1); Wodlei, Florian (1) and Rustici, Mauro (1) (1) University of Sassari	Italy
Design teaching sequences with augmented reality to promote visualization in chemistry.	P41	Merino; Cristian (1); Arellano, Marcela (1); Quiroz, Waldo (1), Nilo, Nicole (1), Olivares, Carla (1), Vargas, Jonathan (1), Berna, Sergio (1); Paipa, Carolina (1); Miriam Struchiner (1) Pontificia Universidad Católica de Valparaíso	Chile
Supporting In-Service Chemistry Teachers to Pedagogical Effectively Integrate Virtual Laboratory in their Teaching through a Blended Professional Development Program in Greece	P42	Antonoglou, LEMONIA (1); Psillos, Dimitrios; Athanasios Taramopoulos (1) Aristotle University of Thessaloniki	Greece

An Activity for Teaching Heat Concept to Visually Impaired Students	P43	Sozibilir, Mustafa (1); Kizilaslan, Aydin (1); Zorluoglu, Levent (1) Ataturk University	Turkey
---	-----	--	--------

Poster Communications PC 2	List of PC2.2. Presentation by the authors 15:50 h – 16:35 h Chair: Gabriel Pinto, Universidad Politécnic de Madrid, Spain		
Mathematical Modelling In Chemistry Lessons - Theory And Reality	P44	Goldhausen, Ines (1) (1) University of Kassel	Alemania
Designing A Curriculum That Gives Students A Relevant, Meaningful, Interesting And Worthwhile Experience Of Chemistry	P45	Farrugia, Josette (1); Mizzi, Doree; Zahra, Richard; Zarb, Dennis (1) University of Malta	Malta
What Happens With Students At Gymnasium Level ¿ Is There Any Change Of The Levels Of Scientific Literacy?	P46	Rannikmäe, Miia (1); Soobard, Regina (1); Reiska, Priit (1) University of Tartu	Estonia
Particles: What Are They? A Proposal On A Learning Progression About The Particle Model Of Matter For Upper Secondary School	P47	Moltó, María Ángeles (1); Hernández, María Isabel (1); Pintó, Roser (1) (1) Universitat Autònoma de Barcelona	Spain
Students' Self-Perceptions About Big Ideas In Science Education	P48	Rannikmäe, Miia (1); Ait, Kerti (1); Holbrook, Jack (1) Tartu University	Estonia
Visualisation Of Hydrogen Bond In Water Dimer: Representations By Finnish Teacher Students And In-Field Teachers	P49	Lundell, Jan (1); Rajamäki, Nea (1); Pyykkö, Lassi (1) (1) University of Jyväskylä	Finland
Phenomenological Primitives (P-Prims) In Chemistry	P50	Zoltán, Tóth (1); Zsolt, Bárány (1) University of Debrecen	Hungary
Results Of The Project "Yum Yum... Good This Science!" How To Deal With Food Chemistry And Education At The Primary School	P51	Domenici, Valentina (1); Gerardi, Chiara (1) Università di Pisa	Italy
Inspiring Early Elementary School Students (Grade 1, 2 And 3) With Chemistry. Stem Program At Anatolia College In Greece	P52	(1) Antonoglou, Lemonia (1); Kalampokis, Ilias; Hatziantoniou Maroulis, Constantina (1) Aristotle University of Thessaloniki and Anatolia Elementary School	Greece
Science Education In Out-Of-School Contexts' Comparison Of Users' And Providers' Ambitions And Perceptions	P53	Goldhausen, Ines (1); Di Fuccia, David-Samuel (1); Ralle, Bernd (1) University of Kassel	Germany
Engaging Future Teachers To Promote Rri: Implementing Engage Project Digital Materials Related To Chemistry Big Ideas	P54	Guitart Mas, Fina (1); Alcaraz-Dominguez, Silvia (1); Barajas, Mario (1) (1) University of Barcelona	Spain
Playing With The Sense Of Smell. A Workshop To Improve Organic Chemistry And Food Science Education	P55	Blanch, Consol (1); Simon, Montse (1) (1) University of Vic-UCC	Spain
Authentic/Alternative Assessment, V: Classification of Organic Compounds, Reactions/Mechanisms by Science Majors	P56	Moisés Camacho (1) (1) University of Puerto Rico at Mayagüez	Puerto Rico
Authentic/Alternative Assessment, V: Performance of Science Majors/Non-Majors on the Categorizing Grid	P57	Moisés Camacho (1) (1) University of Puerto Rico at Mayagüez	Puerto Rico
Authentic/ Alternative Assessment in Chemistry/Science Education V: The Effect of the Auto Quiz on the Achievement of Science College Students	P58	Moisés Camacho (1) (1) University of Puerto Rico at Mayagüez	Puerto Rico