

# Weathering processes and formation of red polygenetic soils and paleosols on hard carbonate rocks: a multiproxy approach (Northern Adriatic, Croatia)

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# MECC'20/22 – Conference Programme

<b>Sunday, September 11, 2022</b>	
11-16	Left luggage office & Refreshment – Wrocław, University of Wrocław, Mineralogical Museum, Kuźnicza 22 street
16.00	bus transfer Wrocław – Kliczków
12-20	Registration – Kliczków Castle
19.30	<b>Welcome Party</b> – Kliczków Castle, Room 1 (Teatralna hall)
<b>Monday, September 12, 2022</b>	
8.45	<b>Opening Ceremony – room 1</b> Opening addresses by <b>Jan ŚRODOŃ</b> – Chairman of the Scientific Committee of Conference and <b>Jakub Kierczak</b> - President of The Mineralogical Society of Poland <b>Chair: Jana Madejova</b> <b>Plenary lecture – room 1</b>
9.00	<b>Sabine PETIT</b> , Alain Decarreau, Brian Grégoire & Eric Ferrage Generalized relationships between the ionic radii of octahedral cations and the <i>b</i> crystallographic parameter of clay and related minerals <i>George Brown Lecture</i>
9.45	<b>Coffee break</b>
	<b>room 1</b>
	<b>room 2</b>
	<b>Session 3</b>
	<b>Session 10</b>
	<i>Environmental applications of clays</i> Chair: <b>Barbora DOUŠOVÁ</b>
	<i>Chemistry and structure of clays</i> Chair: <b>Miroslav Pospíšil</b>
10.00	<b>Daniel MORENO-RODRÍGUEZ</b> , Eleni GIANNI, Ľuboš JANKOVIČ, Eva SCHOLTZOVÁ & Miroslav POSPÍŠIL How atrazine and diuron are adsorbed into spiral halloysite structure
10.00	<b>Reinhard KLEEBERG</b> Lattice parameters of well-ordered kaolinites determined by an optimized Rietveld refinement procedure
10.20	<b>Michał SKIBA</b> , Marta Kisiel, Katarzyna Maj-Szeliga, Magdalena Makiel, Roksana Woźniak, Julia Dyrek, Halyna Zadvernyuk & Halyna Sokol Fixation of cesium by dioctahedral swelling clays
10.20	<b>Anna WALCZYK</b> , B.D. Napruszewska, J. Kryściak-Czerwenka, D. Duraczyńska, R. Karcz, E.M. Serwicka, P. Jeleń, M. Sitarz, Z. Olejniczak Talc modified by milling and alkali activation: physico-chemical characterization and application in base catalysis
10.40	<b>Barbora DOUŠOVÁ</b> , Eva BEDRNOVÁ, Miloslav LHOTKA, Pavel RITERMAN & Libor MASTNÝ Adsorption of phosphate, arsenate and chromate on surface-modified aluminosilicate waste
10.40	<b>Kacper STASZEL</b> , Grzegorz Rzepa, Justyna Hałabuza, Adam Gawel Surface properties and thermal transformation of Al-ferrihydrite
11.00	<b>Coffee break</b>
	<b>Session 3</b>
	<b>Session 7</b>
	<i>Environmental applications of clays</i> Chair: <b>Barbora DOUŠOVÁ</b>
	<i>Burial diagenesis and very low grade metamorphism</i> Chair: <b>Branimir ŠEĀVIĆ &amp; Arkadiusz DERKOWSKI</b>

11.30	<b>Věra VALOVIČOVÁ</b> , Lenka Vaculíková, Eva Plevová, Silvia Dolinská, Ingrid Znamenáčková, Silvie Vallová, Bogna D. Napruszewska & Ewa M. Serwicka Inorganically modified smectites for environmental applications	<b>Iuliu BOBOS</b> , Jan Środoń, Mihai Tatu, Juliano Senna, Zuzanna Ciesielska & Marek Szczerba The influence of exchangeable cations on the pH value of bentonite suspensions
11.50	<b>Miroslav HONTY</b> , Norbert Maes, Diederik Jacques, Vanessa Montoya, Bart Vander Velpen & Simon Dufrasne Stability of the Maldegem Formation under extremely acidic conditions	<b>Branimir ŠEGVIĆ</b> & Luka Badurina Argillitization mediated trace-element mobility during felsic tephra eogenesis
12.10		<b>Iuliu BOBOS</b> Chlorite minerals diversity in the mineralized hydrothermal systems related to Variscan granite magmatism evolution from the Iberian Massif
12.30	<b>Lunch</b>	

	<b>Chair: Jana Madejova</b> <b>Plenary lecture – room 1</b>	
14.00	<b>Juraj BUJDÁK</b> Playing with dye molecules in hybrids with clay minerals to achieve photofunctionality	
14.45	<b>Coffee break</b>	
	<b>room 1</b>	<b>room 2</b>
	<b>Session 6</b>	<b>Session 11</b>
	<i>Clays as palaeoclimate and weathering proxies</i> Chair: <b>Erzsebet HARMAN-TÓTH</b>	<i>Processes on clay mineral surfaces</i> Chair: <b>Christian WEBER</b>
15.00	<b>Marta KISIEL</b> , Michał Skiba, Artur Kuligiewicz, Magdalena Makiel, Katarzyna Dragańska-Deja & Katarzyna Maj-Szeliga For you are mica and to mica you shall return – Potassium fixation within dioctahedral vermiculite	<b>Justyna HAŁABUZA</b> , Anna Popiołek, Grzegorz Rzepa & Kacper Staszal Diversity of surface properties of synthetic feroxyhyte
15.20	<b>Anita GRIZELJ</b> , Luka Badurina, Branimir Šegvić & Ana Čaić-Janković Mineralogical and geochemical characteristics of Early Sarmatian bentonite and marls from the Hrvatsko Zagorje Basin, Croatia	<b>Georgios D. CHRYSSIKOS</b> & Eirini Siranidi H/D exchange in clays by real-time infrared spectroscopy
15.40	<b>Coffee break</b>	
	<b>Session 13</b>	<b>Session 11</b>
	<i>Methods of characterizing and quantifying clay minerals</i> Chair: <b>Georg GRATHOFF</b>	<i>Processes on clay mineral surfaces</i> Chair: <b>Christian WEBER</b>
16.00	<b>Georg GRATHOFF</b> , Jared Freiburg & Markus Peltz An XRD and TEM study of illite polytypes in shales and sandstones: Examples from the Illinois and the North German Basins	<b>Eirini SIRANIDI</b> , Fevronia T. Andreou, Georgios D. Chryssikos & Arkadiusz Derkowski New aspects of kaolinite intercalation by NIR spectroscopy
16.20	<b>Maciej JAWORSKI</b> Various techniques for the study and characterization of non-conductive materials using dual beam SEM/FIB microscopes	
16.40	<b>Break</b>	
17-18	<b>Poster session (sessions: 3, 7, 10, 11, 13, 15) – lobby</b>	



	<b>Chair: Matthias Schellhorn</b>	
	<b>Plenary lecture – room 1</b>	
14.00	<b>Arkadiusz DERKOWSKI</b>	
	The quest of proton and deuteron: hydrogen position and reactions in clay minerals	
14.45	<b>Coffee break</b>	
	<b>room 1</b>	<b>room 2</b>
	<b>Session 9</b>	<b>Session 14</b>
	<i>Precambrian clays</i> Chair: <b>Jan ŠRODOŇ</b>	<i>Teaching clay science</i> Chairs: <b>Franz OTTNER &amp; Czesław AUGUST</b>
15.00	<b>H. Albert GILG</b> , Ilya Bindeman & Ulf B. Andersson A mineralogical and stable H-O-C-isotope study of clay-rich alteration zones in the Fennoscandian Shield, Norrbotten, Sweden	<b>Peter UHLIK</b> An attempt to summarize the process of teaching clay sciences in Slovakia
15.20		<b>Miroslav Pospíšil</b> (Czech National Clay Group) Selected lectures related to clay minerals taught in the Czech Republic
15.40	<b>Coffee break</b>	
16.00		<b>Erzsebet HARMAN-TÓTH</b> , Zs. Benkó, J. Kovács, F. Kristály, É. Makó, F. Má dai, T. Németh, M. Polgári, M. Pósfai, B. Raucsik, I. Viczián & T.G. Weiszb urg Clay science in the higher education: a Hungarian overview
16.20		<b>Czesław AUGUST</b> Teaching clay sciences at Polish Universities
16.40	<b>Break</b>	
17-18	<b>Poster session (symposia: 2, 4, 5, 8, 12) – lobby</b>	
19.00	Dinner	
19.00	Meeting of the representatives of the Mid-European Clay Groups – room 4	



	<b>Chair: Miroslav Pospíšil</b> <b>Plenary lecture – room 1</b>	
14.00	<b>Jakub MATUSIK</b> Kaolinite madness - 1:1 layered structure which reveals its potential for synthesis of next generation materials	
14.45	<b>Coffee break</b>	
	<b>room 1</b>	<b>room 2</b>
	<b>Session 5</b> <i>Clays and clay minerals in petroleum systems</i> Chairs: <b>Peter UHLÍK, Sylwia KOWALSKA &amp; Katarzyna GÓRNIAK</b>	<b>Session 8</b> <i>Clays and clay-sized minerals in soils and palaeosols</i> Chair: <b>Goran DURM</b>
15.00	<b>Markus PELTZ</b> , Sina Hale, Georg Grathoff, Philipp Blum & Laurence Warr Illite morphologies in aeolian Rotliegend sandstones: insights into the stability and clogging of particles during high-pressure flow-through experiments	<b>Magdalena MAKIEL</b> , Michał Skiba, Marta Kisiel, Katarzyna Maj-Szeliga, Artur Błachowski, Wojciech Szymański & Dorota Salata Iron oxyhydroxides formed at the expense of glauconite in temperate climate soils
15.20	<b>Sylwia KOWALSKA</b> , Benedykt Kubik, Rafał Skupio & Krzysztof Wolański Downhole lithological profile reconstruction based on chemical composition of core samples and drill cuttings measured with portable X-ray fluorescence spectrometer	
15.40	<b>Coffee break</b>	
	<b>Session 1</b> <i>Clays and clay minerals in industry</i> Chairs: <b>Albert GILG &amp; Marek OSACKÝ</b>	
16.00	<b>Peter UHLÍK</b> , Jaroslav Lexa, Jana Brčková, Miroslav Pereszlényi, Adrian Biroň, Yuqing Bai, Michal Majdan, Jana Madejová, Peter Boháč, Valéria Kureková, Juraj Šurka, Matej Rybárik, Otilia Lintnerová, Marek Osacký & Jozef Hodermarský Bentonite, perlite and kaolinite-rich zones in the Lutilla I bentonite deposit, the Western Carpathians, Slovakia	
16.20	<b>Franz OTTNER</b> , Hubert Feiglstorfer, Karin Wriessnig & Maria Mayrhofer Clay as a traditional raw material for earth buildings in Austria	
17.00	Meeting of the DTTG Group – room 4	
19.45	<b>Closing Ceremony – room 3</b>	
20.00	<b>Conference Dinner – room 3</b>	
<b>Thursday, September 15, 2022</b>		
8.00	Post-meeting field trip 1 – led by <b>Katarzyna GÓRNIAK &amp; Czesław AUGUST</b> Kaolin and halloysite deposits Kliczków Castle – Nowogrodziec – Bolesławiec – Dunino – Kliczków Castle	Post-meeting field trip 2 – led by <b>Adam PIESTRZYŃSKI</b> Copper-bearing black shale (Kupferschiefer) Kliczków Castle – Lubin – Jawor – Kliczków Castle
9.00	bus transfer Kliczków Castle – Wrocław	

## Poster session

Monday, September 12, 2022

<b>Session 3</b>	
1	Ines Mulder, Malte Emmling, <b>Matthias SCHELLHORN</b> , Stephan Kaufhold & Jan Siemens Reduction of ammonia emission from cattle manure after bentonite addition
2	<b>Eva PLEVOVÁ</b> , Silvie Vallová, Lenka Vaculíková, Věra Valovičová, Dagmar Klichová & Barbora Sokolová Sorption of diclofenac from aqueous solution using organo-smectites
3	<b>Halyna M. SOKOL</b> , Myroslav I. Sprynskyy, Alla Y. Ganzyuk, Oleksander I. Stremetskyi Characterization and application of glauconite as catalyst for the formulation of high octane fuels
4	<b>Ritwick SUDHEER KUMAR</b> , Carolin Podlech, Georg Grathoff, Laurence N. Warr & Daniel Svensson Mineral alterations in buffer materials from the 5 <sup>th</sup> "hot bentonite" experiment in the Äspö Hard Rock Laboratory, Sweden
<b>Session 7</b>	
5	<b>Ena TOPALOVIĆ</b> , Gerd Rantitsch, Dražen Balen & Darko Tipljaš Correlation of illite Kübler indices and results of Raman spectroscopy of carbonaceous material from metasedimentary rocks from NW Croatia
<b>Session 10</b>	
6	<b>Agnieszka KLIMEK</b> , Judyta Gacur & Jakub Mokrzycki The influence of temperature on acid activation of bentonite from Kopernica (Slovakia)
7	<b>Eva SCHOLTZOVA</b> , Malgorzata Zimowska & Daniel Tunega <i>Ab initio</i> thermodynamics study of the MgCO <sub>3</sub> formation
8	<b>Peter ŠKORNA</b> , Ľuboš Jankovič, Eva Scholtzová & Daniel Tunega Perchlorate pollutants adsorption by tetrahexylphosphonium-modified beidellite clay – theoretical and experimental research
9	<b>Michal SLANÝ</b> , Ľuboš Jankovič & Jana Madejová Study of hydration of alkylammonium and alkylphosphonium-based organo-montmorillonites using near-IR spectroscopy
<b>Session 11</b>	
10	Krzysztof Bahranowski, <b>Agnieszka KLIMEK</b> , Adam Gawęł, Anna Tomczyk-Chmiel & Ewa M. Serwicka Sorption of CO <sub>2</sub> on pillared montmorillonites
<b>Session 13</b>	
11	<b>Miloslav LHOTKA</b> Determination of Texture Characteristics of Clay Minerals
12	<b>Lenka VACULIKOVA</b> , Eva Plevová, Věra Valovičová FT-IR spectroscopy and TG/DTA as a tool for characterization of clay mineral mixtures
<b>Session 15</b>	
13	Ryszard Kryzał, <b>Czesław AUGUST</b> , Jolanta Muszer & Anna Górecka-Nowak Carboniferous (Mississippian) K-bentonites in the Sudetes (SW Poland): mineralogical and geochemical data
14	<b>Tobias MANZEL</b> , Carolin Podlech, Laurence Warr & Stephan Kaufhold In situ measurements of the hydration behavior of compacted Milos (SD80) Bentonite by wet-cell X-Ray diffraction
15	<b>Michal SLANÝ</b> , Eva Kuzielová & Matúš Žemlička Effect of silica fume - metakaolin combination on the thermal stability of cement pastes under hydrothermal conditions



## Poster session

Tuesday, September 13, 2022

<b>Session 2</b>	
16	<b>Martin BARLOG</b> , Helena Pálková & Juraj Bujdák The clay-based nanocomposite with luminescent properties
17	<b>Jana MADEJOVÁ</b> , Martin Barlog, Michal Slaný & Ľuboš Jankovič Characterization of montmorillonite modified with polyoxazoline
18	<b>Marian MATEJDES</b> , Daisuke Himeno, Yasutaka Suzuki & Jun Kawamata Excitonic coupling in the interlayer space of layered silicates
19	Alicja Michalik, Bogna D. Napruszewska, Dorota Duraczyńska, Anna Walczyk, Paweł Nowak, <b>Ewa M. SERWICKA</b> Montmorillonite as support for titania nanoparticles prepared by inverse microemulsion method – physico-chemical and photocatalytic properties
20	<b>Miroslav POSPIŠIL</b> , Aristos Mavrikos, Eleni Gianni, Christina-Vasiliki Lazaratou, Milan Pšenička & Dimitrios Papoulis Palygorskite and TiO <sub>2</sub> interactions by molecular simulations
<b>Session 4</b>	
21	<b>Vasyl STOTSKYI</b> , Fulvio Di Lorenzo, Maria Marques Fernandes, Matthias Krack, Andreas Scheinost, Martine Lanson, Bruno Lanson & Sergey V. Churakov Molecular mechanisms of Ni and Lu adsorption on saponite edge surfaces
<b>Session 5</b>	
22	<b>Yuqing BAI</b> , Marek Osacký, Peter Uhlík, Xiaoli Tan The effect of organics removal using cyclohexane and bleach on mineralogy, chemistry and settling behavior of mature fine tailings (MFT) from Alberta, Canada
<b>Session 8</b>	
23	<b>Theresa BONATOTZKY</b> , Franz Ottner, Egill Erlendsson, Guðrún Gísladóttir The source of pedogenic minerals in young Icelandic soils
24	<b>Jan DIETEL</b> , Kristian Ufer & Reiner Dohrmann Quantification of disordered trioctahedral mica of the phlogopite – annite series using Rietveld refinement and its structure description
25	<b>Magdaléna KOUBOVÁ</b> & Jan Křen Changes in clay mineralogy of ploughed and unploughed topsoils
26	<b>Artur KULIGIEWICZ</b> , Ilya Bindeman, Wojciech Szymański, Mariola Kowalik-Hyla, Zuzanna Ciesielska & Kazimierz Róžański Oxygen and hydrogen isotope composition of soil clay minerals from the Tatra Mountains, Poland
<b>Session 12</b>	
27	<b>Klaudia DZIEWIĄTKA</b> , Jakub Matusik & Karolina Rybka Simultaneous removal of As(V) and safranin O dye by Mg/Al LDH-zeolite heterocoagulated materials in static and dynamic conditions
28	<b>Anna JĘDRAS</b> , Jakub Matusik, Karolina Rybka Heterocoagulated materials based on smectite and layered double hydroxides of different chemistry with dual adsorption properties