

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

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Conference presentation / Izlaganje na skupu

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MECC'20/22 – Conference Programme

Sunday, September 11, 2022	
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	Welcome Party – Kliczków Castle, Room 1 (Teatralna hall)
Monday, September 12, 2022	
8.45	Opening Ceremony – room 1 Opening addresses by Jan ŚRODOŃ – Chairman of the Scientific Committee of Conference and Jakub Kierczak - President of The Mineralogical Society of Poland Chair: Jana Madejova Plenary lecture – room 1
9.00	Sabine PETIT , 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	Coffee break
	room 1
	room 2
	Session 3
	Session 10
	<i>Environmental applications of clays</i> Chair: Barbora DOUŠOVÁ
	<i>Chemistry and structure of clays</i> Chair: Miroslav Pospíšil
10.00	Daniel MORENO-RODRÍGUEZ , Eleni GIANNI, Ľuboš JANKOVIČ, Eva SCHOLTZOVÁ & Miroslav POSPÍŠIL How atrazine and diuron are adsorbed into spiral halloysite structure
10.00	Reinhard KLEEBERG Lattice parameters of well-ordered kaolinites determined by an optimized Rietveld refinement procedure
10.20	Michał SKIBA , Marta Kisiel, Katarzyna Maj-Szeliga, Magdalena Makiel, Roksana Woźniak, Julia Dyrek, Halyna Zadvernyuk & Halyna Sokol Fixation of cesium by dioctahedral swelling clays
10.20	Anna WALCZYK , 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	Barbora DOUŠOVÁ , Eva BEDRNOVÁ, Miloslav LHOTKA, Pavel RITERMAN & Libor MASTNÝ Adsorption of phosphate, arsenate and chromate on surface-modified aluminosilicate waste
10.40	Kacper STASZEL , Grzegorz Rzepa, Justyna Hałabuza, Adam Gawel Surface properties and thermal transformation of Al-ferrihydrite
11.00	Coffee break
	Session 3
	Session 7
	<i>Environmental applications of clays</i> Chair: Barbora DOUŠOVÁ
	<i>Burial diagenesis and very low grade metamorphism</i> Chair: Branimir ŠEGVIĆ & Arkadiusz DERKOWSKI

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

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

Tuesday, September 13, 2022	
	Chair: Anita Grizelj Plenary lecture – room 1
9.00	Goran DURN Weathering processes and formation of red polygenetic soils and paleosols on hard carbonate rocks: a multiproxy approach (Northern Adriatic, Croatia)
9.45	Coffee break
	room 1
	room 2
	Session 9
	Session 2
	<i>Precambrian clays</i> Chair: Jan ŠRODOŃ
	<i>Clay materials for advanced applications</i> Chair: Grażyna SIMHA MARTYŃKOVÁ
10.00	Sirle LIIVAMÄGI & Jan Šrodoń Precambrian paleosols of EEC: parent rock control and clay mineral formation
	Helena PALKOVÁ , Jana Madejová, Martin Barlog, Viktor Hronský, Erik Šimon & Małgorzata Zimowska The effect of the occupancy of the octahedral sites on the mechanochemical stability of smectites
10.20	Karol JEWUŁA , Jan Šrodoń, Artur Kędzior, Mariusz Paszkowski, Magdalena Goryl & Sirle Liivamägi Impact of provenance, weathering, and sedimentary processes on mineral and chemical composition of the Ediacaran and Cambrian mudstones from the East European Craton
	Małgorzata ZIMOWSKA , Michał Śliwa, Jacek Gurgul & Kazimierz Łątka Optimizing of the basic properties of porous heterostructured composites derived from laponite for CO ₂ sorption
10.40	Marek SZCZERBA , Jan Šrodoń, Katarzyna Luberda-Durnaś, Barbara Barylska Diagenetic reorganization of weathering hematite crystallites
	Peter BOHÁČ , Ryo Sasai, Takuya Fujimura, Viktória Planetová & Juraj Bujdák Dye aggregation-induced changes of photosensitizing properties of hybrid systems based on porphyrin dyes and smectite
11.00	Coffee break
	Session 9
	Session 2
	<i>Precambrian clays</i> Chair: Jan ŠRODOŃ
	<i>Clay materials for advanced applications</i> Chair: Grażyna SIMHA MARTYŃKOVÁ
11.30	Artur KULIGIEWICZ , Jan Šrodoń & Sirle Liivamägi Oxygen isotope composition of the Ediacaran weathering crusts from the East European Craton
	Grażyna SIMHA MARTYŃKOVÁ , Sajjan Kumar Sathish, Vít Kubáň & Tugrul Cetinkaya Application of clay minerals to energy storage
11.50	Karol JEWUŁA , Jan Šrodoń, Artur Kuligiewicz, Mateusz Mikołajczak & Sirle Liivimägi Combining mineralogy and chemistry to evaluate palaeosalinity proxies: example from the Ediacaran mudstones of the East European Craton
	Sylva HOLEŠOVÁ , Václav Kaloč & Karla Čech Barabaszová The effect of antimicrobial clay nanofillers on the functional properties of biodegradable polymer films
12.10	Jan ŠRODOŃ , Lynda Williams, Marek Szczerba, Zuzanna Ciesielska & Mariusz Paszkowski Late diagenetic alteration of non-evolved glauconite from the Ediacaran and Cambrian sediments of the East European Craton
	Karla ČECH BARABASZOVÁ , Sylva Holešová & Lukáš Plesník CuO decorated vermiculite particles in polymer nanocomposites
12.30	Lunch

	Chair: Matthias Schellhorn	
	Plenary lecture – room 1	
14.00	Arkadiusz DERKOWSKI	
	The quest of proton and deuteron: hydrogen position and reactions in clay minerals	
14.45	Coffee break	
	room 1	room 2
	Session 9	Session 14
	<i>Precambrian clays</i> Chair: Jan ŠRODOŇ	<i>Teaching clay science</i> Chairs: Franz OTTNER & Czesław AUGUST
15.00	H. Albert GILG , 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	Peter UHLIK An attempt to summarize the process of teaching clay sciences in Slovakia
15.20		Miroslav Pospíšil (Czech National Clay Group) Selected lectures related to clay minerals taught in the Czech Republic
15.40	Coffee break	
16.00		Erzsebet HARMAN-TÓTH , 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		Czesław AUGUST Teaching clay sciences at Polish Universities
16.40	Break	
17-18	Poster session (symposia: 2, 4, 5, 8, 12) – lobby	
19.00	Dinner	
19.00	Meeting of the representatives of the Mid-European Clay Groups – room 4	

Wednesday, September 14, 2022	
	Chair: Peter Uhlik Plenary lecture – room 1
9.00	Marek OSACKÝ , M. Geramian, Q. Liu, D.G. Ivey, Y. Bai & T.H. Etsell The effect of clay minerals on non-aqueous bitumen extraction from Alberta oil sands
9.45	Coffee break
	room 1 room 2
	Session 12 Session 4
	<i>Layered double hydroxides (anionic clays) and related materials</i> Chair: František KOVANDA <i>Clays in geotechnics</i> Chair: Matthias SCHELLHORN
10.00	Karolina RYBKA , Jakub Matusik, Barbora Hudcová & Mateusz Marzec The mechanisms of V(V) interactions with Mg/Al and Mg/Fe LDH with various interlayer anions Halyna ZADVERNYUK Influence of polymer treatment on the swelling capacity of bentonite
10.20	Barbora BÖSERLE HUDCOVÁ , Jeremy B. Fein, Daniel C.W. Tsang & Michael Komárek Composites of iron-based layered double hydroxides and biochar: Metal(loid) removal and structural change investigations Matthias SCHELLHORN, Ralf Diedel, Mona Schiller, Katja Emmerich, Florian Christ, Danny Bodenstab, Steffen Pöthig & Wiebke Baille Bulk emplacement of high compacted Westerwald bentonite in a large-scale experiment for shaft sealings in underground mining
10.40	Szabolcs Muráth, Daniel Moreno-Rodríguez, Miroslav Pospíšil, Jiří Brus & František KOVANDA Intercalation of drugs poorly soluble in water into Mg-Al layered double hydroxide host Wolfgang LIESKE, Wiebke Baille & Torsten Wichtmann The modification of bentonite using water-soluble polymers varying in charge and molecular weight
11.00	Coffee break
	Workshop Session 4
	Molecular modeling of clay minerals' interactions with molecules <i>Clays in geotechnics</i> Chair: Matthias SCHELLHORN
11.30	Marek SZCZERBA Introduction to molecular simulations, interatomic forces Katja EMMERICH, R. Schuhmann, F. Königer, J. Hesser, D. Jaeggi, J. Aurich, J.L. García-Siñeriz, U. Glaubach, C. Rölke, R. Diedel & K. Wieczorek Shaft sealing with the Sandwich sealing system
11.50	Marek SZCZERBA Energy minimization, molecular dynamics Eleanor BAKKER, Durime Buqesi-Ahmeti, Eduard Stefanescu, Franz Königer, Matthias Gruner, Martin Hofmann, Rainer Schuhmann & Katja Emmerich Ion transport and cation exchange in semi-technical scale Sandwich sealing system experiments for HLRW disposal
12.10	Paweł ZIEMIANSKI Monte Carlo molecular simulations Wolfgang Jan ZUCHA, Thomas Blattmann & Michael Plötze Influence of fulvic and humic acids on the undrained shear strength of clayey soils
12.30	Lunch

	Chair: Miroslav Pospíšil Plenary lecture – room 1	
14.00	Jakub MATUSIK Kaolinite madness - 1:1 layered structure which reveals its potential for synthesis of next generation materials	
14.45	Coffee break	
	room 1	room 2
	Session 5 <i>Clays and clay minerals in petroleum systems</i> Chairs: Peter UHLÍK, Sylwia KOWALSKA & Katarzyna GÓRNIAK	Session 8 <i>Clays and clay-sized minerals in soils and palaeosols</i> Chair: Goran DURM
15.00	Markus PELTZ , 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	Magdalena MAKIEL , 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	Sylwia KOWALSKA , 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	Coffee break	
	Session 1 <i>Clays and clay minerals in industry</i> Chairs: Albert GILG & Marek OSACKÝ	
16.00	Peter UHLÍK , 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	Franz OTTNER , 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	Closing Ceremony – room 3	
20.00	Conference Dinner – room 3	
Thursday, September 15, 2022		
8.00	Post-meeting field trip 1 – led by Katarzyna GÓRNIAK & Czesław AUGUST Kaolin and halloysite deposits Kliczków Castle – Nowogrodziec – Bolesławiec – Dunino – Kliczków Castle	Post-meeting field trip 2 – led by Adam PIESTRZYŃSKI Copper-bearing black shale (Kupferschiefer) Kliczków Castle – Lubin – Jawor – Kliczków Castle
9.00	bus transfer Kliczków Castle – Wrocław	

Poster session

Monday, September 12, 2022

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

Session 2	
16	Martin BARLOG , Helena Pálková & Juraj Bujdák The clay-based nanocomposite with luminescent properties
17	Jana MADEJOVÁ , Martin Barlog, Michal Slaný & Ľuboš Jankovič Characterization of montmorillonite modified with polyoxazoline
18	Marian MATEJDES , 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, Ewa M. SERWICKA Montmorillonite as support for titania nanoparticles prepared by inverse microemulsion method – physico-chemical and photocatalytic properties
20	Miroslav POSPIŠIL , Aristos Mavrikos, Eleni Gianni, Christina-Vasiliki Lazaratou, Milan Pšenička & Dimitrios Papoulis Palygorskite and TiO ₂ interactions by molecular simulations
Session 4	
21	Vasyl STOTSKYI , 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
Session 5	
22	Yuqing BAI , 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
Session 8	
23	Theresa BONATOTZKY , Franz Ottner, Egill Erlendsson, Guðrún Gísladóttir The source of pedogenic minerals in young Icelandic soils
24	Jan DIETEL , Kristian Ufer & Reiner Dohrmann Quantification of disordered trioctahedral mica of the phlogopite – annite series using Rietveld refinement and its structure description
25	Magdaléna KOUBOVÁ & Jan Křen Changes in clay mineralogy of ploughed and unploughed topsoils
26	Artur KULIGIEWICZ , 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
Session 12	
27	Klaudia DZIEWIĄTKA , 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	Anna JEĐRAS , Jakub Matusik, Karolina Rybka Heterocoagulated materials based on smectite and layered double hydroxides of different chemistry with dual adsorption properties