

# CEEC-TAC6 & Medicta2021

## PROGRAM

### Editors

Matko Erceg

Andrei Rotaru



*6<sup>th</sup> Central and Eastern European Conference on  
Thermal Analysis and Calorimetry (CEEC-TAC6).  
15<sup>th</sup> Mediterranean Conference on Calorimetry and  
Thermal Analysis (Medicta2021).*

*20-24 July 2021*

*Split, Croatia*



**The 6<sup>th</sup> Central and Eastern European Conference  
on Thermal Analysis and Calorimetry  
&  
The 15<sup>th</sup> Mediterranean Conference on  
Calorimetry and Thermal Analysis**

*CEEC-TAC6 & Medicta2021*

*20-24 July 2021 – Split, Croatia*

is organized by the:

**Central and Eastern European Committee for  
Thermal Analysis and Calorimetry (CEEC-TAC),**

**Committee for Thermal Analysis & Calorimetry of the Croatian Society of  
Chemical Engineers (HDKIT),**

**University of Split (Sveuceliste u Splitu),**

**Faculty of Chemistry and Technology (KTF) of the University of Split,**

**University of Craiova (UCv),**

**Institute of Physical Chemistry "Ilie G. Murgulescu" (ICF)  
of the Romanian Academy**



# CEEC-TAC

**Central and Eastern European Committee for  
Thermal Analysis and Calorimetry**



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# **PROGRAM**



**Tuesday, 20<sup>th</sup> of July**

- 13<sup>30</sup>-16<sup>30</sup>**      *Coffee Break and Poster Session area at KTF*  
**Registration of participants at CEEC-TAC6 & Medicta2021**
- 18<sup>30</sup>-19<sup>20</sup>**      *Room E at FESB, next to KTF*  
**Opening Ceremony**
- 19<sup>20</sup>-20<sup>00</sup>**      *Room E at FESB, next to KTF*  
Chair: Andrei Rotaru  
PL1 **Herbert Danninger**  
Thermoanalytical techniques for characterizing sintering  
processes in ferrous powder metallurgy
- 20<sup>00</sup>-22<sup>30</sup>**      *Coffee Break and Poster Session area at KTF*  
**Welcome Cocktail**

## Wednesday, 21<sup>st</sup> of July

### **Room A (Grey)**

Chair: Maja Voncina

09<sup>00</sup>-09<sup>30</sup> IL01 Innovative coupled approaches in thermal analysis investigations

**Roberta Risoluti**

### **Room D (Blue)**

Chair: Kestutis Baltakys

09<sup>00</sup>-09<sup>30</sup> IL02 Thermal analysis of thin films – an important aspect in reparation of functional layers

**Romana Cerc Korosec**

09<sup>30</sup>-11<sup>20</sup>

### **Poster and Coffee break area**

### **Poster Session 1 & Coffee Break**

### **Room A (Grey)**

Chair: Anton Trnik

11<sup>20</sup>-11<sup>40</sup> OP1.01 Model free kinetic studies of the curing behaviour of bio-based epoxy and acrylate resins

Arunjunai Raj Mahendra

11<sup>40</sup>-12<sup>00</sup> OP1.02 Thermal degradation kinetics of polyurethanes and their analysis by model free kinetics and kinetic modelling

Prakhar Pouranick

12<sup>00</sup>-12<sup>20</sup> OP1.03 Quasi-isothermal modulated DSC for characterising sulphur vulcanisation systems

Igor Shlyapnikov

12<sup>20</sup>-12<sup>40</sup> OP1.04 Thermogravimetric and kinetic analysis of plastic food packaging

Irma Kremer

### **Room B (Green)**

Chair: Raimundas Siauciunas

11<sup>20</sup>-11<sup>40</sup> OP2.01 Mechanochemical synthesis of manganese doped ceria nanoparticle

Ivana Katarina Ivkovic

11<sup>40</sup>-12<sup>00</sup> OP2.02 Thermal stability study of hydrothermally-derived copper-doped cerium (IV) oxide nanoparticles

Katarina Muzina

12<sup>00</sup>-12<sup>20</sup> OP2.03 N/TiO<sub>2</sub> nanocomposites: nitrogen effect on the material properties

Camilo Sanchez Tobon

12<sup>20</sup>-12<sup>40</sup> OP2.04 Comparison of amine and sulphide layer-by-layer synthetic route for preparing of the photovoltaic CdSe quantum dots thin-films

Lucija Visic

***Room C (Red)***

Chair: Natasa Celan Korosin

- 11<sup>20</sup>-11<sup>40</sup> OP3.01 Development and characterization of lignin-based self-healing bio-aromatic networks  
Guy Van Assche
- 11<sup>40</sup>-12<sup>00</sup> OP3.02 Modelling cheomorheology of reacting polyurethanes  
Robrecht Verhelle
- 12<sup>00</sup>-12<sup>20</sup> OP3.03 Characterization and thermoanalytical study of novel valsartan coamorphous systems  
Bruno Ekawa
- 12<sup>20</sup>-12<sup>40</sup> OP3.04 Thermal and Mg – ion conductivity properties of PEO/PVP-I blended polymer electrolyte membranes  
Hari Krishna Koduru

***Room D (Blue)***

Chair: Nina Obradovic

- 11<sup>20</sup>-11<sup>40</sup> OP4.01 Breakdown of the anodized nanostructured anatase for photovoltaic devices: the effect of electrolyte composition on preparation of large surfaces of nanotubes  
Vilko Mandic
- 11<sup>40</sup>-12<sup>00</sup> OP4.02 Surface mobility in chalcogenide glass-forming materials  
Jaroslav Bartak
- 12<sup>00</sup>-12<sup>20</sup> OP4.03 Development of nanostructured transparent electrodes for solar cells based on aluminium doped zincite  
Ivana Panzic
- 12<sup>20</sup>-12<sup>40</sup> OP4.04 The effects of thiocyanates on hydration and properties of zinc containing Portland cement  
Lukas Matejka

***Room A (Grey)***

- 12<sup>40</sup>-13<sup>10</sup> CCTAC1 (1<sup>st</sup> Croatian Conference on Thermal Analysis and Calorimetry)

***Canteen at Student Service Centre***

- 13<sup>10</sup>-14<sup>30</sup> Lunch

***Room A (Grey)***

- 14<sup>30</sup>-14<sup>40</sup> CEEC-TAC6 & Medicta2021 Info

***Room A (Grey)***

Chair: Matko Erceg

- 14<sup>40</sup>-15<sup>20</sup> PL2 The potential of biological calorimetry from the perspective of a bioengineer  
**Thomas Maskow**

### **Room A (Grey)**

Chair: Daniele Cangialosi

15<sup>30</sup>-16<sup>00</sup> IL03 Non-standard kinetic analysis of polymer crystallization and liquid evaporation

**Jordi Farjas**

16<sup>10</sup>-16<sup>30</sup> OP1.05 Kinetic Analysis of Thermal Decomposition – A comparison of Standard vs. MTGA models on Marbles

Maria Coletti

16<sup>30</sup>-16<sup>50</sup> OP1.06 NETZSCH – Proven Excellence

Ines Topalovic Pitesa

16<sup>50</sup>-17<sup>10</sup> OP1.07 Study of material quality using thermal analysis methods

Maja Voncina

17<sup>10</sup>-17<sup>30</sup> OP1.08 Effect of NaOH on cellulose pyrolysis kinetics

Arjeta Kryeziu

### **Room B (Green)**

Chair: Herbert Danninger

16<sup>10</sup>-16<sup>30</sup> OP2.05 Tailoring TiO<sub>2</sub> properties by synthesis conditions and annealing

Bara Komarkova

16<sup>30</sup>-16<sup>50</sup> OP2.06 The effect of porosity and particle size on the kinetics of carbon surface oxidation

Lucie Korena

16<sup>50</sup>-17<sup>10</sup> OP2.07 Thermoporometry: the effect of the carbon surface chemistry on the amount of non-freezable water

Gabriela Zelenkova

17<sup>10</sup>-17<sup>30</sup> OP2.08 Thermoporometry of carbons: Is a delta layer really constant?

Tomas Zelenka

### **Room C (Red)**

Chair: Timur Mukhametzyanov

16<sup>10</sup>-16<sup>30</sup> OP3.05 Alkali-metal cation coordination to calix[4]arenes containing triazole functionalities

Josip Pozar

16<sup>30</sup>-16<sup>50</sup> OP3.06 Addressing of different synthetic and shaping approaches for preparing  $\beta$ -TCP-based substrates for biomineralisation of HAP

Floren Radovanovic Peric

16<sup>50</sup>-17<sup>10</sup> OP3.07 Comparison of the effects of biodegradable and conventional polyester-based microplastics on soil abiotic processes

Jakub Fojt

17<sup>10</sup>-17<sup>30</sup> OP3.08 Resorcinol-formaldehyde condensation – DSC study

Eva Kinnertova

**Room D (Blue)**

Chair: Natasa Stipanelov Vrandecic

**15<sup>30</sup>-16<sup>00</sup>** IL04 Investigation of the influence of end-temperature on the fast pyrolysis process of oil shale and on the properties of its products

**Birgit Maaten**

**16<sup>10</sup>-16<sup>30</sup>** OP4.05 Application of isothermal and isoperibolic calorimetry to assess the effect of zinc on hydration of cement blended with fluidized bed combustion ash

Pavel Siler

**16<sup>30</sup>-16<sup>50</sup>** OP4.06 Ionic conductivity and dielectric relaxation of NASICON superionic conductors at the cryogenic threshold

Athanasios Tiliakos

**16<sup>50</sup>-17<sup>10</sup>** OP4.07 The influence of copper ions on the formation, thermal stability and porosity of dibasic calcium silicate hydrates

Tadas Dambrauskas

**17<sup>10</sup>-17<sup>30</sup>** OP4.08 The thermal stability of synthetic dibasic CSH with substituted Cr<sup>3+</sup> ions

Inga Kanabikaite

**17<sup>30</sup>-17<sup>50</sup>** **Poster and Coffee break area**  
**Coffee Break**

**Room A (Grey)**

**17<sup>50</sup>-19<sup>00</sup>** **CEEC-TAC General Assembly**

**Room B (Green)**

**17<sup>50</sup>-19<sup>00</sup>** **Medicta General Assembly**

## Thursday, 22<sup>nd</sup> of July

### **Room A (Grey)**

Chair: Luis A. Perez Maqueda

- 09<sup>00</sup>-09<sup>30</sup> IL05 The role of water vapour pressure during thermal decomposition of crystalline solids: its influence on both the reaction course and its kinetics

**Loic Favergeon**

### **Room D (Blue)**

Chair: Birgit Maaten

- 09<sup>00</sup>-09<sup>30</sup> IL06 Thermodynamic study of water evaporation processes from  $\alpha$ -,  $\beta$ - and  $\gamma$ -cyclodextrin hydrates

**Ludmila N. Zelenina**

09<sup>30</sup>-11<sup>20</sup>

### **Poster and Coffee break area**

### **Poster Session 2 & Coffee Break**

### **Room A (Grey)**

Chair: Peter Simon

- 11<sup>20</sup>-11<sup>40</sup> OP1.09 Kinetics from one TG measurement with combined temperature program  
Vaclav Slovak
- 11<sup>40</sup>-12<sup>00</sup> OP1.10 Jasika company – Laboratory solution  
Mihoci Marijana
- 12<sup>00</sup>-12<sup>20</sup> OP1.11 Effect of Mn on the chemical driving force and bainite transformation kinetics in medium-manganese alloys  
Mateusz Morawiec
- 12<sup>20</sup>-12<sup>40</sup> OP1.12 Bainitic transformation kinetics in single and double isothermal treatments of medium-Mn steels  
Adam Skowronek

### **Room B (Green)**

Chair: Jordi Farjas

- 11<sup>20</sup>-11<sup>40</sup> OP2.09 Thermoanalytic characterization of binder burnout and sintering of lead-free piezoelectric KNNLT multilayer laminates with Ni electrodes  
Jorg Topfer
- 11<sup>40</sup>-12<sup>00</sup> OP2.10 Are the heat capacities of liquids calculated from pVT equations of state and speeds of sound reliable?  
Wojciech Marczak
- 12<sup>00</sup>-12<sup>20</sup> OP2.11 Metal-organic sources of functional film materials: thermodynamics and structure-property relationships  
Kseniya Zherikova
- 12<sup>20</sup>-12<sup>40</sup> OP2.12 Thermochemical properties of Sulfur-containing Compounds with Influence on Atmospheric Chemistry  
Juan Z Davalos



### ***Room C (Red)***

Chair: Romana Cerc Korosec

- 11<sup>20</sup>-11<sup>40</sup> OP3.09 Using of DSC for identification of polyethylene terephthalate (PET) waste of various origin and composition for physical recycling  
Jiri Kucerik
- 11<sup>40</sup>-12<sup>00</sup> OP3.10 Micro(bio)-calorimetry - An early warning tool for the detection of microbial contaminations in drinking water  
Thomas Maskow
- 12<sup>00</sup>-12<sup>20</sup> OP3.11 Thermal methods for estimating the stabilization effect of heterocycles in biopolymer matrix  
Lukasz Linder
- 12<sup>20</sup>-12<sup>40</sup> OP3.12 Modified cereal straw - a novel, functional additives for elastomer biocomposites  
Marcin Maslowski

### ***Room D (Blue)***

Chair: Vilko Mandic

- 11<sup>20</sup>-11<sup>40</sup> OP4.09 Thermal stability of hydrothermally synthetic covellite in 0-650 °C temperature range  
Gabriele Sarapajevaite
- 11<sup>40</sup>-12<sup>00</sup> OP4.10 Parameter influence on kilchoanite synthesis and its application for CO<sub>2</sub> hardening concrete  
Raimundas Siauciuonas
- 12<sup>00</sup>-12<sup>20</sup> OP4.11 Formation of ice within cement-based materials during the first 28 days of hydration  
Dalia Bednarska
- 12<sup>20</sup>-12<sup>40</sup> OP4.12 Monitoring the phase transitions in intercritically annealed multiphase 5Mn alloy using in situ high-temperature X-ray diffraction  
Aleksandra Kozłowska

### ***Room A (Grey)***

- 12<sup>40</sup>-13<sup>10</sup> CCTAC1 (1<sup>st</sup> Croatian Conference on Thermal Analysis and Calorimetry)

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### ***Room A (Grey)***

Chair: Stefano Vecchio Cipriotti

- 14<sup>40</sup>-15<sup>20</sup> PL3 Non-equilibrium glass dynamics by advanced calorimetry  
**Daniele Cangialosi**

**15<sup>20</sup>-20<sup>00</sup>**

**Afternoon Break**

**20<sup>00</sup>-24<sup>00</sup>**

***Restaurant Gusar***  
**Conference Dinner**

## Friday, 23<sup>rd</sup> of July

### **Room A (Grey)**

Chair: Roberta Risoluti

- 09<sup>00</sup>-09<sup>30</sup> IL07 Thermal evolution of gels prepared by modification of aluminum sec-butoxide with ethyl acetoacetate intended for use as ceria catalyst carriers  
**Stanislav Kurajica**

### **Room D (Blue)**

Chair: Thomas Maskow

- 09<sup>00</sup>-09<sup>30</sup> IL08 When the two-state model of protein unfolding breaks?  
**Timur Mukhametzyanov**

09<sup>30</sup>-11<sup>20</sup>

### **Poster and Coffee break area**

### **Poster Session 3 & Coffee Break**

### **Room A (Grey)**

Chair: Loic Favergeon

- 11<sup>20</sup>-11<sup>40</sup> OP1.13 Initial stage of gas and ionic clathrate hydrates formation: Primary and secondary nucleation, formation of metastable phases and their recrystallization  
Andrey Stoporev
- 11<sup>40</sup>-12<sup>00</sup> OP1.14 Kinetic parameters in the general rate equation  
Peter Simon
- 12<sup>00</sup>-12<sup>20</sup> OP1.15 High temperature thermochemical energy storage (TES) for concentrated solar power plants (CSP)  
Luis A. Perez Maqueda
- 12<sup>20</sup>-12<sup>40</sup> OP1.16 Characterization, thermal and ceramic properties of clays from Alhabia (Almería – Spain)  
Eusebiu Rat

### **Room B (Green)**

Chair: Fabio Faraguna

- 11<sup>20</sup>-11<sup>40</sup> OP2.13 Optical and DSC methods for phase behaviour study of petroleum paraffins. Features and advantages  
Vladimir Kuryakov
- 11<sup>40</sup>-12<sup>00</sup> OP2.14 Roman Danube limes mortars - thermal characteristics and identification of production technology  
Snezana Vucetic
- 12<sup>00</sup>-12<sup>20</sup> OP2.15 The effect of hollow glass microspheres on oxidative degradation of Poly( $\epsilon$ -caprolactone)  
Anna Vykydalova
- 12<sup>20</sup>-12<sup>40</sup> OP2.16 The advanced study of thermal degradation of intumescent coatings with TGA-IST16-GC/MS technique  
Natasa Celan Korosin

### ***Room C (Red)***

Chair: Ludmila Zelenina

- 11<sup>20</sup>-11<sup>40</sup> OP3.13 Modified biomass as a filler for rubber biocomposites  
Justyna Miedzianowska
- 11<sup>40</sup>-12<sup>00</sup> OP3.14 Alizarin/vermiculite hybrid pigment as promising  
multifunctional colorant for elastomer composites with  
improved performance  
Boleslaw Szadkowski
- 12<sup>00</sup>-12<sup>20</sup> OP3.15 Epoxy-based S-IPNs as eco-friendly flame retardants  
Cristian Varganici
- 12<sup>20</sup>-12<sup>40</sup> OP3.16 Effect of thermal treatments on the performance of carbon  
xerogels in an electrochemical capacitor  
Madhav Chavhan

### ***Room D (Blue)***

Chair: Pavel Siler

- 11<sup>20</sup>-11<sup>40</sup> OP4.13 Thermal analysis of intermetallic phases formed in Co-Al and  
Ni-Al based superalloys doped with Y  
Damian Migas
- 11<sup>40</sup>-12<sup>00</sup> OP4.14 Synthesis and thermal study of hybrid organic-inorganic  
ceramics based on layered perovskite-like niobate  
KSr<sub>2</sub>Nb<sub>3</sub>O<sub>10</sub>  
Irina Zvereva
- 12<sup>00</sup>-12<sup>20</sup> OP4.15 A critical assessment of the fire properties of different wood  
species and bark from small and bench scale fire experiments  
Lin Jiang
- 12<sup>20</sup>-12<sup>40</sup> OP4.16 Thermal durability of  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> nanoparticles produced by  
laser pyrolysis  
Iulia Lungu

### ***Room A (Grey)***

Chair: Jiri Kucerik

- 12<sup>50</sup>-13<sup>30</sup> PL4 Influence of BaTiO<sub>3</sub>/Fe<sub>2</sub>O<sub>3</sub> addition on crystallization  
and polymorphism of PDVF polymer matrix followed  
by DSC-TG  
**Nina Obradovic**

### ***Canteen at Student Service Centre***

13<sup>30</sup>-14<sup>40</sup> **Lunch**

### ***Room A (Grey)***

14<sup>40</sup>-14<sup>50</sup> **CEEC-TAC7 Info / Medicta2023 Info**

***Room A (Grey)***

Chair: Stanislav Kurajica

**15<sup>00</sup>-15<sup>30</sup>** IL09

Chemical and thermal analysis for architectural heritage materials

**Rodica-Mariana Ion**

***Room D (Blue)***

Chair: Drazan Jozic

**15<sup>00</sup>-15<sup>30</sup>** IL10

Insight on some recent energy-structure-stability studies of organic compounds: a thermochemical approach

**Maria das Dores M. C. Ribeiro da Silva**

**15<sup>30</sup>-18<sup>00</sup>**

**Afternoon Break**

**18<sup>00</sup>-20<sup>00</sup>**

**Old-City Tour**

**Saturday, 24<sup>th</sup> of July**

**09<sup>00</sup>-10<sup>30</sup>**

*Poster and Coffee break area*  
**KTF Tour**

**10<sup>30</sup>**

*Poster and Coffee break area*  
**Closing Ceremony**

## LIST OF COMMUNICATIONS

### PLENARY LECTURES

- PL1** Danninger, Herbert Thermoanalytical techniques for characterizing sintering processes in ferrous powder metallurgy
- PL2** Maskow, Thomas The potential of biological calorimetry from the perspective of an bioengineer
- PL3** Cangialosi, Daniele Non-equilibrium glass dynamics by advanced calorimetry
- PL4** Obradovic, Nina Influence of BaTiO<sub>3</sub>/Fe<sub>2</sub>O<sub>3</sub> addition on crystallization and polymorphism of PDVF polymer matrix followed by DSC-TG

### INVITED LECTURES

- IL01** Risoluti, Roberta Innovative coupled approaches in thermal analysis investigations
- IL02** Cerc Korosec, Romana Thermal analysis of thin films – an important aspect in reparation of functional layers
- IL03** Farjas, Jordi Non-standard kinetic analysis of polymer crystallization and liquid evaporation
- IL04** Maaten, Birgit Investigation of the influence of end-temperature on the fast pyrolysis process of oil shale and on the properties of its products
- IL05** Favergeon, Loic The role of water vapour pressure during thermal decomposition of crystalline solids: its influence on both the reaction course and its kinetics
- IL06** Zelenina, Ludmila N. Thermodynamic study of water evaporation processes from  $\alpha$ -,  $\beta$ - and  $\gamma$ -cyclodextrin hydrates
- IL07** Kurajica, Stanislav Thermal evolution of gels prepared by modification of aluminum sec-butoxide with ethyl acetoacetate intended for use as ceria catalyst carriers
- IL08** Mukhametzyanov, Timur When the two-state model of protein unfolding breaks?
- IL09** Ion, Rodica-Mariana Chemical and thermal analysis for architectural heritage materials
- IL10** Ribeiro da Silva, Maria das Dores M. C. Insight on some recent energy-structure-stability studies of organic compounds: a thermochemical approach

## ORAL PRESENTATIONS

### ORAL PRESENTATIONS 1 Theory & Methods, Kinetics & Catalysis, Fuels & Biofuels, Energetics and Applied Thermal Engineering

- OP1.01** Mahendra, Arunjunai Raj Model free kinetic studies of the curing behaviour of bio-based epoxy and acrylate resins
- OP1.02** Pouranick, Prakhar Thermal degradation kinetics of polyurethanes and their analysis by model free kinetics and kinetic modelling
- OP1.03** Shlyapnikov, Igor Quasi-isothermal modulated DSC for characterising sulphur vulcanisation systems
- OP1.04** Kremer, Irma Thermogravimetric and kinetic analysis of plastic food packaging
- OP1.05** Coletti, Marco Kinetic Analysis of Thermal Decomposition – A comparison of Standard vs. MTGA models on Marbles
- OP1.06** Topalovic Pitesa, Ines NETZSCH – Proven Excellence
- OP1.07** Voncina, Maja Study of material quality using thermal analysis methods
- OP1.08** Kryeziu, Arjeta Effect of NaOH on cellulose pyrolysis kinetics
- OP1.09** Slovak, Vaclav Kinetics from one TG measurement with combined temperature program
- OP1.10** Mihoci, Marijana Jasika company – Laboratory solution
- OP1.11** Morawiec, Mateusz Effect of Mn on the chemical driving force and bainite transformation kinetics in medium-manganese alloys
- OP1.12** Skowronek, Adam Bainitic transformation kinetics in single and double isothermal treatments of medium-Mn steels
- OP1.13** Stoporev, Andrey Initial stage of gas and ionic clathrate hydrates formation: Primary and secondary nucleation, formation of metastable phases and their recrystallization
- OP1.14** Simon, Peter Kinetic parameters in the general rate equation
- OP1.15** Perez Maqueda, Luis A. High temperature thermochemical energy storage (TES) for concentrated solar power plants (CSP)
- OP1.16** Rat, Eusebiu Characterization, thermal and ceramic properties of clays from Alhabia (Almería – Spain)

### ORAL PRESENTATIONS 2 Thermodynamics, Thermochemistry & Calorimetry and Thin Films & Nanomaterials

- OP2.01** Ivkovic, Ivana Katarina Mechanochemical synthesis of manganese doped ceria nanoparticle
- OP2.02** Muzina, Katarina Thermal stability study of hydrothermally-derived copper-doped cerium (IV) oxide nanoparticles
- OP2.03** Sanchez Tobon, Camilo N/TiO<sub>2</sub> nanocomposites: nitrogen effect on the material properties
- OP2.04** Visic, Lucija Comparison of amine and sulphide layer-by-layer synthetic route for preparing of the photovoltaic CdSe quantum dots thin-films
- OP2.05** Komarkova, Bara Tailoring TiO<sub>2</sub> properties by synthesis conditions and annealing
- OP2.06** Korena, Lucie The effect of porosity and particle size on the kinetics of carbon surface oxidation



- OP2.07** Zelenkova, Gabriela Thermoporometry: the effect of the carbon surface chemistry on the amount of non-freezable water
- OP2.08** Zelenka, Tomas Thermoporometry of carbons: Is a delta layer really constant?
- OP2.09** Topfer, Jorg Thermoanalytic characterization of binder burnout and sintering of lead-free piezoelectric KNNLT multilayer laminates with Ni electrodes
- OP2.10** Marczak, Wojciech Are the heat capacities of liquids calculated from  $pVT$  equations of state and speeds of sound reliable?
- OP2.11** Zherikova, Kseniya Metal-organic sources of functional film materials: thermodynamics and structure-property relationships
- OP2.12** Davalos, Juan Z Thermochemical properties of Sulfur-containing Compounds with Influence on Atmospheric Chemistry
- OP2.13** Kuryakov, Vladimir Optical and DSC methods for phase behaviour study of petroleum paraffins. Features and advantages
- OP2.14** Vucetic, Snezana Roman Danube limes mortars - thermal characteristics and identification of production technology
- OP2.15** Vykydalova, Anna The effect of hollow glass microspheres on oxidative degradation of Poly( $\epsilon$ -caprolactone)
- OP2.16** Celan Korosin, Natasa The advanced study of thermal degradation of intumescent coatings with TGA-IST16-GC/MS technique

### **ORAL PRESENTATIONS 3 Materials: Functional Materials, Ceramics, Metals & Alloys, Cements, Glasses and Composites**

- OP3.01** Van Assche, Guy Development and characterization of lignin-based self-healing bio-aromatic networks
- OP3.02** Verhelle, Robrecht Modelling rheology of reacting polyurethanes
- OP3.03** Ekawa, Bruno Characterization and thermoanalytical study of novel valsartan coamorphous systems
- OP3.04** Koduru, Hari Krishna Thermal and Mg – ion conductivity properties of PEO/PVP-I blended polymer electrolyte membranes
- OP3.05** Pozar, Josip Alkali-metal cation coordination to calix[4]arenes containing triazole functionalities
- OP3.06** Radovanovic Peric, Floren Addressing of different synthetic and shaping approaches for preparing  $\beta$ -TCP-based substrates for biomineralisation of HAP
- OP3.07** Fojt, Jakub Comparison of the effects of biodegradable and conventional polyester-based microplastics on soil abiotic processes
- OP3.08** Kinnertova, Eva Resorcinol-formaldehyde condensation – DSC study
- OP3.09** Kucerik, Jiri Using of DSC for identification of polyethylene terephthalate (PET) waste of various origin and composition for physical recycling
- OP3.10** Maskow, Thomas Micro(bio-)calorimetry - An early warning tool for the detection of microbial contaminations in drinking water taps
- OP3.11** Linder, Lukasz Thermal methods for estimating the stabilization effect of heterocycles in biopolymer matrix

- OP3.12** Maslowski, Marcin Modified cereal straw - a novel, functional additives for elastomer biocomposites
- OP3.13** Miedzianowska, Justyna Modified biomass as a filler for rubber biocomposites
- OP3.14** Szadkowski, Boleslaw Alizarin/vermiculite hybrid pigment as promising multifunctional colorant for elastomer composites with improved performance
- OP3.15** Varganici, Cristian Epoxy-based S-IPNs as eco-friendly flame retardants
- OP3.16** Chavhan, Madhav Effect of thermal treatments on the performance of carbon xerogels in an electrochemical capacitor

#### **ORAL PRESENTATIONS 4 Polymers, Bio(macro)molecules & Biocomposites, Life science and Organic & Functional complex compound**

- OP4.01** Mandic, Vilko Breakdown of the anodized nanostructured anatase for photovoltaic devices: the effect of electrolyte composition on preparation of large surfaces of nanotubes
- OP4.02** Bartak, Jaroslav Surface mobility in chalcogenide glass-forming materials
- OP4.03** Panzic, Ivana Development of nanostructured transparent electrodes for solar cells based on aluminium doped zincite
- OP4.04** Matejka, Lukas The effects of thiocyanates on hydration and properties of zinc containing Portland cement
- OP4.05** Siler, Pavel Application of isothermal and isoperibolic calorimetry to assess the effect of zinc on hydration of cement blended with fluidized bed combustion ash
- OP4.06** Tiliakos, Athanasios Ionic conductivity and dielectric relaxation of NASICON superionic conductors at the cryogenic threshold
- OP4.07** Dambrauskas, Tadas The influence of copper ions on the formation, thermal stability and porosity of dibasic calcium silicate hydrates
- OP4.08** Kanabikaite, Inga The thermal stability of synthetic dibasic CSH with substituted Cr<sup>3+</sup> ions
- OP4.09** Sarapajevaite, Gabriele Thermal stability of hydrothermally synthetic covellite in 0-650 °C temperature range
- OP4.10** Siauciunas, Raimundas Parameter influence on kilchoanite synthesis and its application for CO<sub>2</sub> hardening concrete
- OP4.11** Bednarska, Dalia Formation of ice within cement-based materials during the first 28 days of hydration
- OP4.12** Kozłowska, Aleksandra Monitoring the phase transitions in intercritically annealed multiphase 5Mn alloy using in situ high-temperature X-ray diffraction
- OP4.13** Migas, Damian Thermal analysis of intermetallic phases formed in Co-Al and Ni-Al based superalloys doped with Y
- OP4.14** Zvereva, Irina Synthesis and thermal study of hybrid organic-inorganic ceramics based on layered perovskite-like niobate KSr<sub>2</sub>Nb<sub>3</sub>O<sub>10</sub>
- OP4.15** Jiang, Lin A critical assessment of the fire properties of different wood species and bark from small and bench scale fire experiments
- OP4.16** Lungu, Iulia Thermal durability of γ-Fe<sub>2</sub>O<sub>3</sub> nanoparticles produced by laser pyrolysis

## POSTER SESSION 1

- PS1.001** Roedolf, Daniel Dynamic Mechanical Analysis for Polymer Characterization: from Thin Films to Stiff Composites
- PS1.002** Verdonk, Els Characterization of Bitumen by MDSC® and Hi-Res™ TGA
- PS1.003** Ekawa, Bruno Thermoanalytical study of Norfloxacin and Pyrazinoic Acid cocrystal
- PS1.004** Dimowa, Louiza Thermal decomposition of Cd ion exchanged clinoptilolite
- PS1.005** Dimowa, Louiza Thermal characteristics of clinoptilolite from Bulgarian deposits
- PS1.006** Koduru, Hari Krishna Thermal properties of nanocomposite of liquid crystalline SB(3R)-11 molecules and carbon nanotubes
- PS1.007** Shivachev, Boris Investigation on the variation of the surface and structure properties of polished GaN and AlN single crystals after femtosecond laser irradiation
- PS1.008** Shivachev, Boris Effects of natural zeolite additive on the thermal and crystal-chemical properties of white cement mortars
- PS1.009** Ackar, Petra Stability of waste oil in water emulsions in dependence on temperature
- PS1.010** Babic, Marko Thermal characterization of waste oil in water emulsions
- PS1.011** Blazic, Roko Glass transition temperature of cellulose acetate mixture and poly(dimethylaminoethyl methacrylate-co-methyl methacrylate)
- PS1.012** Borko, Valentina Influence of sialylation on the thermodynamic parameters for the binding of ferric ion to human serum transferrin
- PS1.013** Brusac, Edvin Thermoanalytical approach to physicochemical compatibility evaluation of 5-aminosalicylates and folic acid
- PS1.014** Curkovic, Lidija The effect of waste coffee ground on the porosity and structure of slip cast alumina ceramics
- PS1.015** Curkovic, Lidija Optimization of corrosion resistance of high purity alumina ceramics in nitric acid
- PS1.016** Dominko, Damir Heat capacity of the Cu<sub>55</sub>Hf<sub>45-x</sub>Ti<sub>x</sub> metallic glasses
- PS1.017** Gotovusa, Mia Low temperature properties of propyl, butyl and octyl based biodiesels and corresponding biodiesel-diesel blends
- PS1.018** Jakic, Mice Effect of magnesium hydroxide addition on the mechanism of thermal degradation of poly(ethylene oxide)
- PS1.019** Kerep, Robert A thermodynamic characterization on the binding of oral chemotherapeutic drug imatinib to human  $\alpha$ 1-acid glycoprotein using isothermal titration calorimetry
- PS1.020** Kisicek, Virna Thermal and magnetic properties of M-type hexaferrites
- PS1.021** Kresic, Irena Poly(ethylene oxide)-lithium bis(oxalato)borate based nanocomposite polymer electrolytes
- PS1.022** Mandic, Vilko Thermal stability and utilisation of 1D-nanostructured Co<sub>3</sub>O<sub>4</sub> rods derived by simple solvothermal processing

- PS1.023** Medic, Mihovil Influence of molar mass and styrene on thermal stability and phase transitions of methacrylate based polymer additives for lubricating oils
- PS1.024** Nedic Tiban, Nela Adulteration of monofloral honey with fructose syrup and possibility of detection by differential scanning calorimetry
- PS1.025** Panzic, Ivana The role of thermal processing for achieving homogeneity of magnetron sputtered AZO films
- PS1.026** Perinovic Jozic, Sanja Thermal properties of PEO/NaAlg blend film complexed with LiBOB
- PS1.027** Pucko, Ivan Thermal properties of different poly(alkymethacrylate) additives and their influence on low temperature properties of mineral diesel fuel
- PS1.028** Radovanovic Peric, Floren Reactive spark ablation deposition and subsequent thermal conversion of copper oxide porous thin-films
- PS1.029** Rebrovic, Lucija Influence of molar mass and styrene on thermal stability and phase transitions of methacrylate based polymer additives for lubricating oils
- PS1.030** Seba, Tino Determination of human alpha-1-acid glycoprotein–drug binding constants using microscale thermophoresis
- PS1.031** Susac, Kristina Development of polymer nanocomposites with enhanced thermal conductivity
- PS1.032** Vidovic, Elvira Synthesis and characterization of cellulose/PDMAEMA copolymers and nanocomposites with SiO<sub>2</sub>
- PS1.033** Visic, Lucija Porous SnO<sub>2</sub>-modified cellulose photocatalysts derived by non-hydrolytic sol-gel freeze-drying
- PS1.034** Freitas, Vera LS Thermodynamic Properties of Two Maleic Anhydride Derivatives: Experimental and Computational Approaches
- PS1.035** Jiang, Lin Characterisation of the fire behaviour of wood: From pyrolysis to fire retardant mechanisms
- PS1.036** Danilova-Tretiak, Svetlana Low-temperature DSC for investigation of hyaluronic acid interaction with collagen-containing materials
- PS1.037** Danilova-Tretiak, Svetlana Thermophysical behavior features of water structured into fibrillar collagen of hyaluronic acid treated tendons

## POSTER SESSION 2

- PS2.001** Birgauanu, Iuliana Influence of temperature and composition on excess thermodynamic properties. Statistical processing of experimental data using the MLR method
- PS2.002** Bojan, Mihaela Optical characterization of some common polymers and metal nanoparticles dispersion
- PS2.003** Carabet, Carla Alice Thermal, optical, spectral, adhesive and biological properties of some ethers with chlorine, with two azo groups, of the anthracene

|                |                      |   |
|----------------|----------------------|---|
| <b>PS2.004</b> | Rapa, Maria          | Exploring of thermal properties of plant-polymeric films for medical applications   |
| <b>PS2.005</b> | Rapa, Maria          | Thermal properties of electrospun bio-based polymers for food packaging applications  |
| <b>PS2.006</b> | Rosu, Liliana        | Non-isothermal degradation kinetic study of new multicomponent polymer systems for flame retardant coatings   |
| <b>PS2.007</b> | Rosu, Liliana        | Thermal characterization of bio-based epoxy resins crosslinked with curing agents from raw renewable resources  |
| <b>PS2.008</b> | Sarbu, Daniela       | Thermal, morphological and rheological properties of the MRF122 magnetorheological fluid  |
| <b>PS2.009</b> | Sarbu, Daniela       | Thermal, morphological and rheological properties of the energized MRF122 magnetorheological fluid  |
| <b>PS2.010</b> | Trifoi, Ancuta       | Core-shell structured $\text{Fe}_3\text{O}_4@\text{SiO}_2@\text{OSO}_3\text{H}$ magnetically recoverable nanocatalyst for the synthesis of glycerol acetals |
| <b>PS2.011</b> | Trifoi, Ancuta       | Preparation of $\text{Fe}_3\text{O}_4/\text{PVA}$ magnetic nanofibers via electrospinning composite processing  |
| <b>PS2.012</b> | Tutunaru, Bogdan     | Thermal decomposition of some chemotherapeutic drugs as gemcitabine and paclitaxel  |
| <b>PS2.013</b> | Tutunaru, Bogdan     | Study on thermal and electrochemical stability of Captan fungicide  |
| <b>PS2.014</b> | Varganici, Cristian  | Thermal behaviour and fungal protection of composites based on wood and natural and synthetic epoxy resins cured with a rosin acid derivative               |
| <b>PS2.015</b> | Malyshkin, Dmitrii   | Investigation of hydration thermodynamics by differential scanning calorimetry  |
| <b>PS2.016</b> | Nikolaev, Evgenii    | Thermal analysis of Co-Zn ferrite synthesis from milled powders   |
| <b>PS2.017</b> | Nikolaev, Evgenii    | Investigation of interactions in the mechanically activated $\text{Fe}_2\text{O}_3\text{-Li}_2\text{CO}_3$ reagents by thermal analysis                     |
| <b>PS2.018</b> | Nikolaeva, Svetlana  | Thermal analysis of sintering Li-Ti-Zn ferrite from mechanically activated powders  |
| <b>PS2.019</b> | Nikolaeva, Svetlana  | Thermal analysis of the lithium ferrite formation from $\text{Sm}_2\text{O}_3/\text{Fe}_2\text{O}_3/\text{Li}_2\text{CO}_3$ precursors                      |
| <b>PS2.020</b> | Sereda, Vladimir     | Defect structure and thermodynamics of $\text{RBaCo}_2\text{O}_{6-\delta}$ (R = Sm, Eu) double perovskites  |
| <b>PS2.021</b> | Zelenina, Ludmila N. | Thermodynamic investigation of Te(IV) polybromides  |
| <b>PS2.022</b> | Mentus, Slavko       | A thermogravimetric and DFT study of silver molybdate reduction by hydrogen   |
| <b>PS2.023</b> | Mentus, Slavko       | Thermal stability and antimicrobial properties of pure and modified pyrophyllite (PYRO/Ag) clay   |
| <b>PS2.024</b> | Vucetic, Snezana     | Thermal characterisation and valorisation of cement kiln dust for production of traditional ceramic materials   |
| <b>PS2.025</b> | Chromcikova, Maria   | Study of bioactive glasses doped with $\text{Li}_2\text{O}$ by thermal methods  |
| <b>PS2.026</b> | Hruska, Branislav    | Thermodynamic model and identification of the surface-active components of barium crystal glass   |

- PS2.027** Medved, Igor Relation of the phase change temperature of polycrystalline PCMs to the profile of heat capacity peaks
- PS2.028** Nowicka, Aleksandra Effect of the powder processing methods on the densification behaviour, grain growth and mechanical properties of zirconia toughened alumina
- PS2.029** Pagacova, Jana Study of thermal properties of nanocomposite inorganic-organic xerogels based on TEOS and OTES precursors
- PS2.030** Papucova, Iveta Using biopolymers as a fillers in polymer blends
- PS2.031** Papucova, Iveta Structural and thermal properties of elastomeric blends filled with modified cellulose
- PS2.032** Prnova, Anna Thermal behaviour and photoluminescence properties of Er<sup>3+</sup> doped ytterbium-aluminate glasses
- PS2.033** Prnova, Anna Crystallization kinetics of Bi-doped 2CaO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> glasses
- PS2.034** Trnik, Anton The crystallization of anorthite in a system of illite/smectite and CaCO<sub>3</sub> mixture
- PS2.035** Rotaru, Andrei Prehistoric ceramics: analysis of late Neolithic / Eneolithic pottery and clay samples from the Foeni Tell-Orthodox Cemetery (Timis County, Romania) using complementary techniques
- PS2.036** Rotaru, Andrei Chemical and thermal analysis for different waste substrates – comparative scenario analysis
- PS2.037** Marin, Laurentiu Verification of the increase of the thermal stability of a polyurethane matrix as a result of its nanomodification with a layered silicate by performing thermogravimetric analyzes

### POSTER SESSION 3

- PS3.001** Fojt, Jakub Effects of two size fractions of platinum nanoparticles on properties of soil organic matter
- PS3.002** Kucerik, Jiri TG study on the influence of PET and tyre-based microplastics on soil properties
- PS3.003** Paschke, Thomas Application of High Pressure Thermogravimetry as a perfect tool to study catalyst performance
- PS3.004** Fortunato, Marco How to transform a waste material into a resource: the thermal evolution of spent LDHs (layered doubled hydroxides) after the absorption of Cr (VI)
- PS3.005** Dal Poggetto, Giovanni Sol-Gel synthesis, thermal, spectroscopic and morphological characterization of bioactive titania
- PS3.006** Leonelli, Cristina A TGA/DTA/EGA study on the thermal degradation of an intermediate compound of TiO<sub>2</sub> nanopowders production
- PS3.007** Parisi, Filippo Clay nanoparticles as pharmaceutical carriers to enhance anticancer treatments
- PS3.008** Sciascia, Luciana Synthesis and characterization of Carbon Fiber Precursors coupled to a chemical oscillator
- PS3.009** Pudule, Aiga Anna A greener path by hydrothermally processing apatite
- PS3.010** Baltakys, Kestutis The effect of mechanochemical treatment on the structure of silica gel waste

|                |                        |  |
|----------------|------------------------|--|
| <b>PS3.011</b> | Eisinas, Anatolijus    | The effect of Cu <sup>2+</sup> ions concentration on the adsorption capacity of synthetic mayenite and its thermal stability   |
| <b>PS3.012</b> | Eisinas, Anatolijus    | The effect of synthetic katoite additive on the hydration of calcium aluminate cement  |
| <b>PS3.013</b> | Robinaite, Dovile      | Thermal stability of synthetic kuzelite in the temperature range of 30-1250 °C   |
| <b>PS3.014</b> | Petuhov, Oleg          | Thermal and adsorption study of hydrothermal charcoals obtained from agricultural residues   |
| <b>PS3.015</b> | Petuhov, Oleg          | Thermal behaviour of Mn(II) mono- and trinuclear coordination compounds based on 2,6-diacetylpyridine and isonicotinic acid hydrazide  |
| <b>PS3.016</b> | Berezicka, Anna        | Effect of MgO and CaO addition on the silicate-phosphate glasses forming ability   |
| <b>PS3.017</b> | Kuczek, Justyna        | Thermal and structural investigations on P <sub>2</sub> O <sub>5</sub> -SiO <sub>2</sub> -K <sub>2</sub> O-MgO-CaO-Co <sub>2</sub> O <sub>3</sub> glass crystalline materials          |
| <b>PS3.018</b> | Kuczek, Justyna        | Thermal and spectroscopic studies of multicomponent glasses from P <sub>2</sub> O <sub>5</sub> -SiO <sub>2</sub> -K <sub>2</sub> O-MgO-CaO-Co <sub>2</sub> O <sub>3</sub> system       |
| <b>PS3.019</b> | Maslowski, Marcin      | Common Nettle ( <i>Urtica dioica</i> L.) as an Essential Filler of Natural Rubber Biocomposites  |
| <b>PS3.020</b> | Miedzianowska, Justyna | The straw-clay fillers applied in elastomer composites   |
| <b>PS3.021</b> | Migas, Damian          | Influence of alloying elements on thermal properties of polycrystalline $\gamma'$ strengthened Co-Al-W superalloys   |
| <b>PS3.022</b> | Moneta, Marek          | Temperature dependence of structural and magnetic transformations in Finemet amorphous alloy with Fe substituted for La  |
| <b>PS3.023</b> | Rybinski, Przemyslaw   | Influence of carbon and basalt fillers on thermal, mechanical and fire hazard of EPDM rubber composites  |
| <b>PS3.024</b> | Sulowska, Justyna      | Compositional effects on the interactions between structural elements in sulfur-bearing silicate-phosphate glasses   |
| <b>PS3.025</b> | Szadkowski, Boleslaw   | Stabilization of natural dyes onto vermiculite mineral – hybrid pigments with improved performance   |
| <b>PS3.026</b> | Davies, Philip         | DSC Microscope Accessory - Visual Observation of Material Transitions Combined with the Enthalpy Data  |
| <b>PS3.027</b> | Perez Maqueda, Luis A. | New synthesis strategy of BiFeO <sub>3</sub> -BaTiO <sub>3</sub> electroceramics for high temperature applications   |
| <b>PS3.028</b> | Rat, Eusebiu           | Thermal behaviour of raw clay materials containing muscovite (illite/sericite), kaolinite and pyrophyllite: analysis of vitrification rate and estimation of optimum firing conditions |
| <b>PS3.029</b> | Tobar, Jose Luis       | Thermophysical study of mixtures bentonite + <i>Nannochloropsis sp</i> + sea water and distilled water for cosmetic uses   |
| <b>PS3.030</b> | Tsiarta, Nikoletta     | Structural characterization of sol-gel TiO <sub>2</sub> and CeO <sub>2</sub> coated ceramics membranes   |
| <b>PS3.031</b> | Liu, Yi-Hsuan          | Thermal and rheological properties of dietary fiber from mushroom <i>Flammulina velutipes</i> via autoclaving associated with enzyme treatment   |

|                |                |   |
|----------------|----------------|---|
| <b>PS3.032</b> | Sun, Wen-Jhen  | Antioxidant effects of peanut skin extracts for button mushrooms and sacha inchi oil via isothermal calorimetry   |
| <b>PS3.033</b> | Balasko, Tilen | Thermogravimetric analysis of the high-temperature oxidation behaviour of three hot-work tool steels  |
| <b>PS3.034</b> | Voncina, Maja  | Enthalpy balance of process path of the sheet production from EN AW 5182 aluminium alloy  |
| <b>PS3.035</b> | Mato, Marta    | Study on the antibacterial effect of silver nitrate on the growth of <i>Pseudomonas aeruginosa</i>  |
| <b>PS3.036</b> | Harabor, Ana   | Thermal, structural and superconducting properties of YBCO-123 & Ag (small percentage) system   |
| <b>PS3.037</b> | Harabor, Ana   | Irreversibility line of bulk $\text{Bi}_{1.8}\text{Pb}_{0.3}\text{Sr}_2\text{Ca}_2(\text{Cu}_{1-x}\text{Ni}_x)_{3.3}\text{O}_y$ system for $x=0.000, 0.002, \text{ and } 0.005$ . Thermal and structural properties |
| <b>PS3.038</b> | Erceg, Matko   | Kinetics of thermal decomposition of some 4-phenyldiazenyl-4'-[(4-chlorobenzyl)oxy]biphenyls  |

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