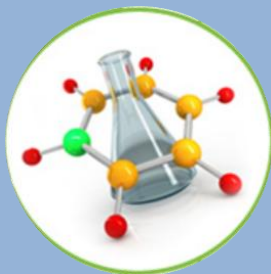


# Innovative Materials and Processes



Romania, Iași, November 5 - 8, 2014

2<sup>nd</sup> International Conference on Chemical  
Engineering

# ICCE 2014



<http://www.ch.tuiasi.ro/ICCE2014>

CONFERENCE PROGRAM 2014

**Innovative Materials and Processes**

**2<sup>nd</sup> International Conference on  
Chemical Engineering**

**România, Iași, November 5 - 8, 2014**

**ICCE 2014**

***Organized by:***

**“GHEORGHE ASACHI” TECHNICAL UNIVERSITY OF IAȘI, FACULTY OF  
CHEMICAL ENGINEERING AND ENVIRONMENTAL PROTECTION**

**ALUMNI ASSOCIATION OF FACULTY OF INDUSTRIAL CHEMISTRY**

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Prof. **Nicolae Vaszilcsin**, University Politehnica of Timișoara

Prof. **Colin Webb**, University of Manchester

## GENERAL PROGRAMME

### Wednesday, 05.11.2014

- 8.30 - 10.00 Registration, "Orizont Room", Hall Faculty of Chemical Engineering and Environmental Protection
- 10.00 - 10.30 Opening Ceremony, CH II hall
- 10.30 - 11.10 Plenary Lecture - Prof. Ecaterina Andronescu
- 11.10 - 11.20 Coffee Break
- 11.20 - 12.00 Plenary Lecture - Prof. Jozef Drabowicz
- 12.00 - 12.40 Plenary Lecture - Prof. Acad. Bogdan Simionescu
  
- 16.00 - 18.30 Organic and Inorganic Chemistry and Advanced Materials and Polymers Sessions (S1, S3)
- 16.00 - 18.30 Processes and Innovative Technologies Session (S2)
- 16.00 - 18.30 Poster Session (S1, S4)  
Organic and Inorganic Chemistry  
Bioprocesses, Biocatalysis, Biotechnologies

### Thursday, 06.11.2014

- 9.30 - 10.10 Plenary Lecture - Prof. Valeriu Cotea
- 10.10 - 10.50 Plenary Lecture - Prof. Nicolas Szita
- 10.50 - 11.00 Coffee Break
- 11.00 - 11.40 Plenary Lecture - Prof. Horia Iovu
- 11.40 - 12.00 Agilrom Presentation
- 9.30 - 12.00 Tempus Meeting
  
- 14.00 - 16.30 Bioprocesses, Biocatalysis, Biotechnologies Session (S4)
- 14.00 - 16.30 Environmental Management, Sustainable Development Session (S5)
- 14.00 - 18.00 Tempus Meeting
- 15.00 - 18.00 Workshop Papercon
- 15.00 - 18.00 Poster Session (S2, S3)  
Innovative Processes and Technologies  
Advanced Materials and Polymers
- 19.00 Official conference dinner, Ramada Hotel

### Friday 07.11.2014

- 9.30 - 10.10 Plenary Lecture - Prof. Ionel Mangalagiu
- 10.10 - 10.50 Plenary Lecture - Prof. Shin'ichi Nakatsuji
- 10.50 - 11.00 Coffee Break
- 11.00 - 13.00 Poster Session (S5)  
Environmental Management, Sustainable Development
- 10.00 - 13.00 Tempus Meeting
- 13.00 Conference Closing

**Dear Guests and Colleagues,**

**Welcome to the Second International Conference on Chemical Engineering, organized by our faculty, with the support of “Gheorghe Asachi” Technical University of Iași!**

**Thank you for join us again these days dedicated to Chemical Engineering.**

As many of us know, ten years ago we started to organize the Days of Faculty of Chemical Engineering and Environmental Protection, event focused especially on the scientific results of the Ph.D.-students and master students. Every year this initiative has grown and got more and more consistency. Thus, as a consequence of our faculty's position in the national top of scientific research, this conference became of international reference since 2012. In fact, the first edition of this international event has been dedicated to the celebration of 100 years of chemical engineering education in Iași, and, I dare to affirm that we represent the promoters of the “oldest” school on chemical engineering in Romania. Just considering the age.

The International Conference on Chemical Engineering completes successfully the second traditional international event of the faculty, more experienced and recognized, the International Conference on Environmental Engineering and Management, which will be at the 8th edition next year, being organized every two years. The continuous alternation of these two important scientific events underlines the attractiveness of the scientific areas that are found in the activity of our faculty members.

This year, we were happy to consider over 150 papers included in the conference program, an increased number from the previous edition. The authors of these communications or posters are

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from 13 countries. We will be also pleased to attend to eight plenary conferences and six key-lectures, presented by scientific personalities in the field, from Romania or abroad.

At few days after Halloween, with any association with, only by coincidence, we celebrate during these three days the chemical engineering, which, together with the chemistry, is considered a "horror" science for someones, an inaccessible area for others, a not at all easy profession which apparently loses its attractiveness by many people. This is the trend observed with various magnitudes in different developed geographic regions of the world. However, it is really an artificial trend. We, all the participants to this conference, through which we will present and expose, we have to show that chemical engineering is too far from losing even a bit of its creative and practical potential. And we have also to underline that the development of human society depends essentially and dramatically on the development of chemistry and chemical engineering. Because, if something could give color, flavor, fascination, and trust to such technical field as engineering is, if something can create and perpetuate life, if something can give value and brightness to an universe and can improve our universe, that "something" is the chemistry and chemical engineering.

I wish success to all the participants to the conference and I wish to all of you to enjoy these days in Iași and I hope that you will return anytime with pleasure in our faculty, university, and city.

**Professor Dan Cașcaval,**

Dean,  
Faculty of Chemical Engineering and Environmental Protection

2014

## **ORGANIZING COMMITTEE**

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**Assoc. Professor Eugen Horoba**  
**Professor Ioan Mămăligă**  
**Eng. Eduard Moisii**  
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**Lect. Gabriela Soreanu**  
**(Section 5: [gsor@tuiasi.ro](mailto:gsor@tuiasi.ro))**

### **Website design and administration:**

**Lecturer Nicolae Apostolescu**  
**[napostol@tuiasi.ro](mailto:napostol@tuiasi.ro)**

### Scientific and general information:

Official opening of the Conference will be held in CH II at the Faculty of Chemical Engineering and Environmental Protection, Dimitrie Mangeron Bd., No. 71, Iași.

The scientific communications will be presented Wednesday, 05<sup>th</sup> of November 2014 in CH III and in the Faculty Council Room into the Faculty of Chemical Engineering and Environmental Protection Building, Dimitrie Mangeron Bd., No. 71, Iași and Thursday, 06<sup>th</sup> of November in the Faculty Council Room of Faculty of Chemical Engineering and Environmental Protection Building, Dimitrie Mangeron Bd., No. 71, Iași and for Section S5 in Technical University Main Building (Rectorate) Dimitrie Mangeron Bd. No. 67, Iași.

Posters will be displayed during full time of the Conference in the Main Hall of the Chemical Engineering and Environmental Protection Faculty. Abstracts have been published on the Conference volume (CD).



## Programme

**Wednesday, 05 November 2014**

Venue: CH II, Faculty of Chemical Engineering and Environmental Protection

10<sup>00</sup>- 10<sup>30</sup> Opening Ceremony

### **Chairmen:**

**Prof. Dan Cașcaval**, "Gheorghe Asachi" Technical University of Iași

**Prof. Teodor Măluțan**, "Gheorghe Asachi" Technical University of Iași

10<sup>30</sup>- 11<sup>10</sup> Plenary Lecture: **Prof. Ecaterina Andronescu**,  
University Politehnica of Bucharest

### **MULTIFUNCTIONAL MATERIALS FOR BONE CANCER TREATMENT**

*Chairman: Prof. Dan Cașcaval, "Gheorghe Asachi" Technical University of Iași*

11<sup>10</sup>- 11<sup>20</sup> Coffee Break

11<sup>20</sup>- 12<sup>00</sup> Plenary Lecture: **Prof. Jozef Drabowicz**, Dlugosz  
University in Czestochowa

### **SUBSTITUENTS WITH A STEREOGENIC HETEROATOM AS A TOOL TO INDUCE CHIRALITY IN THE DERIVATIVES WITH THE POTENTIAL APPLICATIONS IN THE CHEMISTRY OF NEW MATERIALS OR AS CHIRAL AUXILIARIES**

12<sup>00</sup>- 12<sup>40</sup> Plenary Lecture: **Prof. Acad. Bogdan Simionescu**,  
"Gheorghe Asachi" Technical University of Iași

### **POLYMER ENGINEERING IN MACROMOLECULAR, SUPRAMOLECULAR AND BIOLOGICAL SCIENCES**

*Chairman: Prof. Teodor Măluțan, "Gheorghe Asachi" Technical University of Iași*

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**16<sup>00</sup> - 18<sup>30</sup> Topic: *Organic and Inorganic Chemistry (S1) and Advanced Materials and Polymers Sessions (S3)***

Lecture room: Faculty Council Room, Faculty of Chemical Engineering and Environmental Protection

*Chairmen:*

**Prof. Ioan Mamaligă**, "Gheorghe Asachi" Technical University of Iași

**Prof. Lucian Gavrilă**, "V. Alecsandri" University of Bacău

**S3-C01. Towards limitations of Li-Ion battery electrodes process technologies**

*W. Schabel*

Karlsruhe Institute of Technology, Karlsruhe, Germany

**S3-C02. Fluorescent carbon dots embedded in chitosan nanoparticles for medical imaging**

*L. Alupei, C. S. Stan, M. Popa, C. A. Peptu*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S3-C03. Collagen immobilization on UV-treated PET**

*M. Droboța<sup>1,2</sup>, M. Aflori<sup>1</sup>, L. M. Gradinaru<sup>1</sup>, D. S. Vasilescu<sup>2</sup>*

<sup>1</sup>Petru Poni Institute of Macromolecular Chemistry, Iași, Romania

<sup>2</sup>University POLITEHNICA of Bucharest, Bucharest, Romania

**S3-C04. Design of porous microparticles for biomedical applications**

*M. A. Lungan<sup>1</sup>, M. Popa<sup>1</sup>, S. Racovita<sup>2</sup>, S. Vasiliu<sup>2</sup>, M. Droboța<sup>2,3</sup>*

<sup>1</sup>"Gheorghe Asachi" Technical University of Iași, Iași, Romania

<sup>2</sup>Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania

<sup>3</sup>University POLITEHNICA of Bucharest, Bucharest, Romania

**S3-C05. Removal of textile dyes from wastewater (direct brown, bright direct red, bright direct blue) in the presence of surfactants and ethylenglycol by coagulation and catalytic /photocatalytic oxidations methods**

*M. Gonta, V. Mateevici, V. Iambartev*

State University of Moldova, Chisinau, Republic of Moldova

**S3-C06. Self –assembling behaviour of amphiphilicazopolysiloxanes modified with quaternary ammonium groups**

*L. Epure, S. Ciubotarescu, N. Hurduc*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S1-C01. Study of the synthesis and degradation of 4.4'-dipyridine derivatives**

*A. Chira<sup>1</sup>, B. Bucur<sup>1</sup>, T. Galaon<sup>2</sup>, G.L. Radu<sup>1</sup>*

<sup>1</sup>National Institute of Research and Development for Biological Sciences, Centre of Bioanalysis, Bucharest, Romania

<sup>2</sup>National Research and Development Institute for Industrial Ecology – ECOIND, Bucharest, Romania

**S1-C02. New complexes of 2-(1H-1,2,4-triazol-3-yl) pyridine with Co(II), Rh(III) and Cd(II) ions: Synthesis, structure and magnetic properties**

*P. Gospei (Horlescu)<sup>1</sup>, D. Sutiman<sup>1</sup>, C. Mita<sup>2</sup>, M. Fortună<sup>3</sup>, C. Peptu<sup>3</sup>, C. Stan<sup>1</sup>*

<sup>1</sup>"Gheorghe Asachi" Technical University of Iași, Iași, Romania

<sup>2</sup>"Alexandru Ioan Cuza" University of Iași, Iași, Romania

<sup>3</sup>"Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania

16<sup>00</sup> - 18<sup>30</sup> Topic: *Processes and Innovative Technologies (S2)*

Lecture room: CH III, Faculty of Chemical Engineering and Environmental Protection

*Chairmen:*

**Prof. Daniel Sutiman**, "Gheorghe Asachi" Technical University of Iași

**Prof. Alexandru Szep**, "Sapientia" University Cluj-Napoca

**S2-C01. Simulation and performance evaluation of a plant for glycerol conversion to acrolein**

*G. Guta, I. Banu, C.S. Bildea, G. Bozga*

University Politehnica Bucharest, Bucharest, Romania

**S2-C02. Integrated design and control of 1,1-dioxy-butane production process**

*A. Smochină, A. Javaid, C.S. Bildea*

University Politehnica of Bucharest, Bucharest, Romania

**S2-C03. Catalytic cyclic distillation – A novel process intensification approach in reactive separations**

*C.S. Bildea<sup>1</sup>, C. Pătruț<sup>1</sup>, A.A. Kiss<sup>2</sup>*

<sup>1</sup>University Politehnica of Bucharest, Bucharest, Romania

<sup>2</sup>AkzoNobel – Research, Development & Innovation, Deventer, The Netherlands

**S2-C04. Water vapor equilibrium and kinetics onto cylindrical alumina composite materials**

*E. David, M. S. Secula, I. Mamaliqă*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S2-C05. TAME process PFD evaluation**

*O. Perederic<sup>1</sup>, V. Pleșu<sup>1</sup>, P. Iancu<sup>1</sup>, G. Bumbac<sup>1</sup>, A. Bonet-Ruiz<sup>1</sup>, J. Bonet-Ruiz<sup>2</sup>, B. Muchan<sup>3</sup>*

<sup>1</sup>University Politehnica of Bucharest, Bucharest, Romania

<sup>2</sup>University of Barcelona, Barcelona, Spain

<sup>3</sup>OMV Petrom, Petrobrazi Refinery, Brazi, Prahova, Romania

**S2-C06. NPs of Fe<sub>2</sub>O<sub>3</sub> on ZnCr<sub>2</sub>O<sub>4</sub> matrices as wide spectrums photocatalysts for light energy conversion**

*M. Pușcasu<sup>1</sup>, K.I. Katsumata<sup>2</sup>, S. Boariu<sup>1</sup>, G. Carja<sup>1</sup>*

<sup>1</sup>"Gheorghe Asachi" Technical University of Iași, Iași, Romania

<sup>2</sup>Tokyo Institute of Technology, Yokohama, Japan



**S2-C07. Hybrid nanoarchitectures based on polymers/layered double hydroxides for applications in innovative technologies**

*L.E. Bibire<sup>1,2</sup>, M. Bercea<sup>2</sup>, M. Pușcasu<sup>1</sup>, G. Carja<sup>1</sup>*

<sup>1</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

<sup>2</sup>“Petru Poni” Institute of Macromolecular Chemistry, Iași, Romania

**S2-C08. Antioxidant activity of bilberry extracts from different morphological parts at three vegetative stages**

*O.C. Bujor<sup>1,2,3</sup>, I. Volf<sup>1</sup>, V.I. Popa<sup>1</sup>, C. Dufour<sup>2,3</sup>*

<sup>1</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

<sup>2</sup>UMR 408 Université d'Avignon, Avignon, France

<sup>3</sup>UMR 408 INRA, Avignon, France

**S2-C09. Kinetic investigation of the ultrasound assisted extraction of polyphenols from spruce bark**

*A.I. Talmaciu, L. Lazăr, I. Volf, V.I. Popa*

“Gheorghe Asachi” Technical University of Iași, Iași, Romania

**S2-C10. Development and optimization of water based paint formula in order to reduce VOCs emissions**

*A.I. Simion<sup>1</sup>, I. Ionită<sup>2</sup>, C.G. Grigoraș<sup>1</sup>, L.G. Favier-Teodorescu<sup>3,4</sup>, L. Gavrilă<sup>1</sup>*

<sup>1</sup>“Vasile Alecsandri” University of Bacău, Bacău, Romania

<sup>2</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

<sup>3</sup>Ecole Nationale Supérieure de Chimie de Rennes, Rennes, France

<sup>4</sup>Université Européenne de Bretagne, Rennes, France

**S2-C11. Removal of carbamazepine by electrocoagulation: investigation of some key operational parameters**

*T. Yehia<sup>1,2</sup>, L. Favier<sup>3,4</sup>, Y. Kadmi<sup>3,4</sup>, M. Gavrilă<sup>5</sup>, C. Vial<sup>1,2</sup>*

<sup>1</sup>Clermont Université, Université Blaise Pascal, Aubière Cedex, France

<sup>2</sup>CNRS, UMR 6602, IP, Aubière, France

<sup>3</sup>Ecole Nationale Supérieure de Chimie de Rennes, Rennes, France

<sup>4</sup>Université Européenne de Bretagne, Rennes, France

<sup>5</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

**S2-C12. An improved methodology for determination of radiochemical and chemical impurities in the synthesis process of <sup>18</sup>F-FDG**

*M. Mihan<sup>1,2</sup>, C. Tuta<sup>1</sup>, R. Leonte<sup>1,2</sup>, A.C. Ion<sup>2</sup>, V. Lavric<sup>2</sup>, D. Niculae<sup>1</sup>*

<sup>1</sup>National Institute for Physics and Nuclear Engineering “Horia Hulubei”, Magurele Ilfov, Romania

<sup>2</sup>University Politehnica of Bucharest, Bucharest, Romania

**S2-C13. Characterization of dyes PVA based hydrogels through CIELAB method**

A.S. Papancea, R.Dobritoiu, S. Patachia  
Transilvania University of Brasov, Romania

**S2-C14. Electron beam flue gas treatment: State of the art and personal contributions**

V. Gogulancea, I. Călinescu, V. Lavric  
University Politehnica of Bucharest, Bucharest, Romania

**S2-C15. Innovative process for expandable polystyrene**

A.E. Coman, P. Iancu, I. Banu, V. Pleșu, M. Teodorescu  
University Politehnica of Bucharest, Bucharest, Romania

16<sup>00</sup> - 18<sup>30</sup>

Poster Session

Hall of Faculty of Chemical Engineering and Environmental  
Protection

**S1. Organic and Inorganic Chemistry**

**S1-P01 The effect of the biofertilizer based on potassium humates and galactomannans extracted from seeds of *Gleditsia triacanthos* used in extraroot plant fertilization**

*I.Dăbuleanu, M.G. Dumitru, A.Reiss*  
University Of Craiova, Craiova, Romania

**S1-P02. Study regarding influence of alternative (staves) and traditional (barrels) process of red wines aged on the antioxidant activity**

*G.D. Dumitriu<sup>1</sup>, V.V.Cotea<sup>1</sup>, R.A.Peinado<sup>2</sup>, N. Lopez de Lerma<sup>2</sup>, C. Zamfir<sup>1</sup>, M. Niculaua<sup>1</sup>, C. Colibaba<sup>1</sup>, C. Luchian<sup>1</sup>*  
<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine, Iași, Romania  
<sup>2</sup>University of Cordoba, Spain

**S1-P03. Synthesis and electron transport properties of some new 4,7-phenanthroline derivatives in thin films**

*C.Ai. Matarneh, R. Danac, L. Leontie, F. Tudorache  
I. Petrila, I. Mangalagiu*  
"Alexandru Ioan Cuza" University of Iași, Iași, Romania

**S1-P04. Synthesis and characterisation of aluminium complex dyes with Alizarin gelb R as ligand**

*D. Sibiescu, M. Vizitiu*  
"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S1-P05. Synthesis and investigation of the physico-chemical properties of Ce-Zn composite oxide catalysts**

*G. Apostolescu, C. Cernatescu, N. Apostolescu, R. E.Tataru-Farmus*  
"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S1-P06. Physico-chemical characterization of chamomile**

*C. Cernatescu, G. Apostolescu*  
"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S1-P07. Fluorescent Carbon-Dots embedded in monolithic silica matrix**

*Cristina Albu, Corneliu S. Stan, Daniel Sutiman*  
"Gheorghe Asachi" Technical University of Iași, Iași, Romania

2014

**S1-P08. Synthesis of some azomethine compounds from o-aminophenol**

*A. A. Ursu, R. E. Tataru-Fărmuș, C. Cernătescu*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S1-P09. Copper nanoparticles supported on polyether-functionalized mesoporous silica. Synthesis and application as catalysts for cinnamaldehyde hydrogenation**

*C. Rudolf<sup>1</sup>, J. Mazilu<sup>1,3</sup>, A. Chiriac<sup>1</sup>, B. Drăgoi<sup>1</sup>, A. Ungureanu<sup>1</sup>, A. Mehd<sup>2</sup>, E. Dumitriu<sup>1</sup>*

<sup>1</sup>"Gheorghe Asachi" Technical University of Iași, Iași, Romania,

<sup>2</sup>Université Montpellier II, Montpellier, France

<sup>3</sup>Université de Poitiers, CNRS UMR 7285, France

**S1-P10. Structure and catalytic performance of ordered mesoporous silica-supported copper–cobalt nanoparticles for hydrogenation reactions**

*A. Chiriac<sup>1</sup>, A.R. Ifrim<sup>1</sup>, C. Ciotonea<sup>1,2</sup>, B. Dragoi<sup>1</sup>, A. Ungureanu<sup>1</sup>, S. Royer<sup>2</sup>, E. Dumitriu<sup>1</sup>*

<sup>1</sup>"Gheorghe Asachi" Technical University of Iași

<sup>2</sup> Université de Poitiers, CNRS UMR 7285, France

**S1-P11. Synthesis, characterization and evaluation of antibacterial activity of new azomethines and diazoaminoderivatives**

*A. M. Mocanu, C. Luca, V.A. Simion*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S1-P12. Wettability modifications of birch veneer treated with lignins of different origins and its copper complexes**

*T. Todorciuc, S. Grama, A.M. Rezmerita, V. I. Popa*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S1-P13. Supramolecular magnetic interactions in mononuclear copper(ii) complexes with thiosemicarbazone Schiff bases derived from 2-hydroxy-3-carboxy-naphthaldehyde**

*A. Lazarescu<sup>1</sup>, N. Nedelko<sup>2</sup>, A. Ślawska-Waniewska<sup>2</sup>, N. Terenti<sup>1</sup>, C. Turta<sup>1</sup>*

<sup>1</sup>Academy of Sciences of Moldova, Chisinau, Republic of Moldavia

<sup>2</sup>Polish Academy of Sciences, Warszawa, Poland

**S1-P14. "Green synthesis" and characterization of gold nanoparticles obtained by a direct reduction method**

*R. State<sup>1,2</sup>, F. Papa<sup>1</sup>, G. Dobrescu<sup>1</sup>, C. Munteanu<sup>1</sup>, A. Volceanov<sup>2</sup>, I. Balint<sup>1</sup>*

<sup>1</sup>"Ilie Murgulescu" Institute of Physical Chemistry of the Romanian Academy, Bucharest, Romania



<sup>2</sup>University “Politehnica” of Bucharest, Bucharest, Romania

**S1-P15. Mesostructured catalysts for oligomerization and metathesis reactions**

*R.D. Andrei<sup>1,2</sup>, I.M. Popa<sup>2</sup>, A. Finiels<sup>1</sup>, F. Fajula<sup>1</sup>, V. Hulea<sup>1</sup>*

<sup>1</sup>Institut Charles Gerhardt, Montpellier, France

<sup>2</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

ICCE 2014

**S4. Bioprocesses, Biocatalysis, Biotechnologies**

**S4-P01. Barium toxicity against yeast during fermentation**

*J.M. Risca<sup>1</sup>, V. Vasilache<sup>1</sup>, M.A. Crețu<sup>2</sup>*

<sup>1</sup>“Stefan cel Mare” University of Suceava, Suceava, Romania

<sup>2</sup>“Alexandru Ioan Cuza” University, Iași, Romania

**S4-P02. Study on chemical inactivation of pantothenic acid**

*M. Poștaru<sup>1</sup>, I.B. Mihășan<sup>2</sup>, L. Kloetzer<sup>2</sup>, A.C. Blaga<sup>2</sup>, M. Turnea<sup>1</sup>,  
D. Cașcaval<sup>2</sup>, A.I. Galaction<sup>1</sup>*

<sup>1</sup>“Grigore T. Popa” University of Medicine and Pharmacy, Iași, Romania

<sup>2</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

**S4-P03. Methylbenzylamine – applications, production, separation**

*M. Poștaru<sup>1</sup>, C. Cheptea<sup>1</sup>, G. Andruseac<sup>1</sup>, D. Cașcaval<sup>2</sup>, A.I. Galaction<sup>1</sup>*

<sup>1</sup>“Grigore T. Popa” University of Medicine and Pharmacy, Iași, Romania

<sup>2</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

**S4-P04. Acetophenone - applications, production, separation**

*L. Kloetzer<sup>1</sup>, A.C. Blaga<sup>1</sup>, C. Cernatescu<sup>1</sup>, A.I. Galaction<sup>2</sup>, D. Cașcaval<sup>1</sup>*

<sup>1</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

<sup>2</sup>“Grigore T. Popa” University of Medicine and Pharmacy, Iași, Romania

**S4-P05. Engineering aspects of degradation of lipids from olive oil mill wastewaters in a stationary basket bioreactor with immobilized *Bacillus spp.***

*A. Tucaliuc<sup>1</sup>, A.C. Blaga<sup>1</sup>, M. Turnea<sup>2</sup>, A.I. Galaction<sup>2</sup>, D. Cașcaval<sup>1</sup>*

<sup>1</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

<sup>2</sup>“Grigore T. Popa” University of Medicine and Pharmacy, Iași, Romania

**S4-P06. Development and validation of UV spectrophotometric method for determining the degradation of molinate by a free and microencapsulated enzyme**

*A.M. Paiva<sup>1</sup>, B.N. Estevinho<sup>1</sup>, J.P. Leite<sup>2</sup>, F. Ferreira-da-Silva<sup>2</sup>, L.M. Gales<sup>2</sup>,  
F. Rocha<sup>1</sup>, O.C. Nunes<sup>1</sup>*

<sup>1</sup>LEPABE, Universidade do Porto, Porto, Portugal

<sup>2</sup>IBMC, Universidade do Porto, Porto, Portugal

**S4-P07. Lysozyme microencapsulated by a spray-drying process**

*B. N. Estevinho<sup>1</sup>, A. M. Damas<sup>2</sup>, P. M. Martins<sup>1,2</sup>, F. Rocha<sup>1</sup>*

<sup>1</sup>LEPABE, Universidade do Porto, Porto, Portugal

<sup>2</sup>ICBAS, Universidade do Porto, Porto, Portugal

**S4-P08. Study of phenolic compounds in Merlot red wines obtained in Iași vineyard by different technologies**

*S. Tudose-Sandu-Ville, C. Colibaba, V.V. Cotea*

“Ion Ionescu de la Brad” University of Agricultural Sciences and Veterinary Medicine, Iași, Romania

**S4-P09. Distribution of oxygen transfer rate in polyphasic system gas-liquid-liquid-solid containing simulated and real fermentation broths**

*A.C. Blaga<sup>1</sup>, C. Ciobanu<sup>1</sup>, M. Turnea<sup>2</sup>, D. Cașcaval<sup>1</sup>, A.I. Galaction<sup>2</sup>*

<sup>1</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

<sup>2</sup>“Grigore T. Popa” University of Medicine and Pharmacy, Iași, Romania

**S4-P10. Reactive Blue 19 dye adsorption on hydroxyapatite**

*S. Barna, G. Ciobanu, C. Luca*

“Gheorghe Asachi” Technical University of Iași, Iași, Romania

**S4-P11. Enzyme approach in hybrid catalysis for obtaining 5-hydroxymethylfurfural from glucose**

*R. Vincent, F.Z.S. Zaid, S. Desset, S. Paul, F. Dumeignil, P. Dhulster, R. Froidevaux*

University of Lille1, Villeneuve d’Ascq, France

**S4-P12. Kinetic selectivity modulation of bioactive peptide appearance in the course of enzymatic proteolysis in microreactor**

*A. Elaglı, S. Laurette, A. Treizebre, B. Bocquet, P. Dhulster, R. Froidevaux*

University of Lille1, Villeneuve d’Ascq, France

**S4-P13. REALCAT: Advanced high throughput bio(chemical)technologies platform for biorefineries hybrid catalysts design**

*P. Dhulster, P. Jacques, R. Froidevaux, S. Paul, S. Desset, F. Dumeignil*

University of Lille1, Villeneuve d’Ascq, France

**S4-P14. Investigation of the chemical treatment effect on the environmental fungi**

*L. Oprica<sup>1</sup>, G. Balan<sup>2</sup>, C. Popescu<sup>3</sup>, R. Muresan<sup>2</sup>, D. Pricop<sup>3</sup>, M. Andries<sup>3</sup>,*

*A. Muresan<sup>2</sup>, A. Muresan<sup>3</sup>*

<sup>1</sup>“Alexandru Ioan Cuza” University, Iași, Romania

<sup>2</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

<sup>3</sup>“Alexandru Ioan Cuza” University, Iași, Romania

**S4-P15. CELLULOSE CELLETS NEW TYPE OF ADSORBENT FOR RETAINING DYES FROM AQUEOUS MEDIA**

D. Suteu<sup>1</sup>, G. Biliuta<sup>2</sup>, L. Rusu<sup>3</sup>, S. Coser<sup>2</sup>

<sup>1</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

<sup>2</sup>“Petru Poni” Institute of Macromolecular Chemistry of Romanian Academy, Iași, Romania

<sup>3</sup>“Vasile Alecsandri” University of Bacău, Bacău, Romania

**S4-P16. PAL and PAM, new promising biocatalysts for amino acids synthesis**

M. I. Toșa, A. Varga, A. Radu, F. D. Irimie, C. Paizs

Babeș-Bolyai University, Cluj-Napoca, Romania

**S4-P17. New chemo-enzymatic approaches for the synthesis of (R)- and (S)-bufuralol**

N. Dima, B. Nagy, C. Paizs, F. D. Irimie, M. I. Toșa

Babeș-Bolyai University, Cluj-Napoca, Romania

**S4-P18. CaL-A-mediated synthesis of benzofuranyl-β-amino acid derivatives**

M. E. Moisă, C. Paizs, M. I. Toșa, F. D. Irimie

Babeș-Bolyai University, Cluj-Napoca, Romania

**S4-P19. Synthesis of new substrates for *phenylalanine ammonia-lyase***

A. Filip, L. C. Bencze, C. Paizs, M. I. Toșa, F. D. Irimie

Babeș-Bolyai University, Cluj-Napoca, Romania

**S4-P20. FAAS determination of cadmium, lead, copper and zinc in some teas from Iași region, Romania**

C. Ciobanu, B. G. Șlencu, A. Corciova

University of Medicine and Pharmacy “Grigore T. Popa” Iași, Iași, Romania

**S4-P21. Influence of hydroxypropyl-cyclodextrin on the physicochemical and biological characteristics of a flavone with important pharmacological properties**

A. Corciova, B. Cioroiu, C. Mircea, C. Tuchilus, C. Ciobanu, C. Dimetriu,  
B. Ivanescu

University of Medicine and Pharmacy “Grigore T. Popa” Iași, Iași, Romania

**Thursday, 06 November 2014**

Venue: Faculty Council Room, Faculty of Chemical Engineering and Environmental Protection

**09<sup>30</sup> - 10<sup>10</sup>** Plenary Lecture: **Prof. Valeriu Cotea**, "Ion Ionescu de la Brad" University of Agricultural Sciences and Veterinary Medicine Iași

## **INNOVATIVE MATERIALS IN WINEMAKING**

*Chairman: Prof. Dan Cașcaval, "Gheorghe Asachi" Technical University of Iași*

**10<sup>10</sup> - 10<sup>50</sup>** Plenary Lecture: **Prof. Nicolas Szita**, University College London

## **A MULTIPLEXED MICROFLUIDIC CULTURE DEVICE FOR STEM CELL BIOPROCESSING**

*Chairman: Prof. Nicolae Hurduc, "Gheorghe Asachi" Technical University of Iași*

**10<sup>50</sup> - 11<sup>00</sup>** Coffee Break

**11<sup>00</sup> - 11<sup>40</sup>** Plenary Lecture: **Prof. Horia Iovu**, University Politehnica of Bucharest

## **ADVANCED POLYMER - BASED NANOCOMPOSITES**

*Chairman: Prof. Nicolae Hurduc "Gheorghe Asachi" Technical University of Iași*

**11<sup>40</sup>-12<sup>00</sup>** Aglirom Presentation

**2014**

14<sup>00</sup> - 16<sup>30</sup> Topic: **Bioprocesses, Biocatalysis, Biotechnologies**  
(S4)

Lecture room: Faculty Council Room, Faculty of Chemical Engineering and Environmental Protection

Chairmen:

**Prof. Gabriel Lucian Radu**, *University Politehnica of Bucharest*

**Prof. Renato Froidevaux**, *University of Science and Technology of Lille1*

**S4-C01. Chiral non hydrolytic enzymatic resolutions**

F. D. Irimie, M. I. Toşa, C. Paizs

Babeş-Bolyai University, Cluj-Napoca, Romania

**S4-C02. Immobilization of enzyme by entrapment in polymer thin film synthesized by RPECVD**

K. Belhacene<sup>1,2</sup>, A. Elaghl<sup>1,2</sup>, C. Vivien<sup>1</sup>, P. Dhulster<sup>2</sup>, P. Supiot<sup>1</sup>,  
R. Froidevaux<sup>2</sup>

<sup>1</sup>IEMN, Université Lille Nord de France - Sciences et Technologies, Villeneuve d'Ascq, France

<sup>2</sup>Institut régional de recherche Charles Viollette, Université Lille Nord de France – Sciences et Technologies, Villeneuve d'Ascq, France

**S4-C03. Development of bio-processes to increase the production of lipopeptides that can be used as biopesticides**

F. Krier, F. Coutte, J. Deravel, P. Jacques

Université Lille1, Villeneuve d'Ascq, France

**S4-C04. Separation of rosmarinic acid from aqueous solutions by pertraction**

M. Poştaru<sup>1</sup>, L. Kloetzer<sup>2</sup>, D. Caşcaval<sup>2</sup>, A.I. Galaction<sup>1</sup>

<sup>1</sup>“Grigore T. Popa” University of Medicine and Pharmacy, Iaşi, Romania

<sup>2</sup>“Gheorghe Asachi” Technical University of Iaşi, Iaşi, Romania.

**S4-C05. Synergic extraction of folic acid with aminic and organophosphoric extractants**

L. Kloetzer<sup>1</sup>, A.C. Blaga<sup>1</sup>, A. Tucaliuc (Carlescu)<sup>1</sup>, A.I. Galaction<sup>2</sup>,  
D. Caşcaval<sup>1</sup>

<sup>1</sup>“Gheorghe Asachi” Technical University of Iaşi, Iaşi, Romania

<sup>2</sup>“Grigore T. Popa” University of Medicine and Pharmacy, Iaşi, Romania

**S4-C06. Vitamin B12 and vitamin C microencapsulated with different biopolymers by a spray drying process**

*B. N. Estevinho<sup>1</sup>, I. Carlan<sup>1</sup>, A.C. Blaga<sup>2</sup>, F. Rocha<sup>1</sup>*

<sup>1</sup>LEPABE, Universidade do Porto, Porto, Portugal

<sup>2</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

**S4-C07. Tamaioasa romaneasca volatiles via SFE**

*L.C. Colibaba<sup>1</sup>, V.V. Cotea<sup>1</sup>, M. Niculaua<sup>2</sup>, C. Luchian<sup>1</sup>*

<sup>1</sup>“Ion Ionescu de la Brad” University of Agricultural Sciences and Veterinary Medicine, Iași, Romania,

<sup>2</sup>Oenological Research Center – Iași Branch of the Romanian Academy, Iași, Romania

**S4-C08. Studies on mixing efficiency and its distribution in *Yarrowia lipolytica* suspensions for a split-cylinder gas-lift bioreactor**

*R.M. Matran<sup>1</sup>, A.C. Blaga<sup>1</sup>, M. Turnea<sup>2</sup>, A.I. Galaction<sup>2</sup>, D. Cașcaval<sup>1</sup>*

<sup>1</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania,

<sup>2</sup>“Grigore T. Popa” University of Medicine and Pharmacy, Iași, Romania

**S4-C09. Succinic acid separation from fermentation broths. Modelling and optimization**

*E.N. Dragoi<sup>1</sup>, S. Curteanu<sup>1</sup>, G.D. Suditu<sup>1</sup>, D. Cașcaval<sup>1</sup>, A.I. Galaction<sup>2</sup>*

<sup>1</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania,

<sup>2</sup>“Grigore T. Popa” University of Medicine and Pharmacy, Iași, Romania

**S4-C10. Experimental study on the impact of engineered particles on environmental microflora**

*L. Oprica<sup>1</sup>, C. Nadejde<sup>2</sup>, M. Andries<sup>2</sup>, E. Puscasu<sup>2</sup>, D. Creanga<sup>2</sup>, M. Balasoiu<sup>3</sup>*

<sup>1</sup>“Alexandru Ioan Cuza” University, Faculty of Biology, Iași, Romania

<sup>2</sup>“Alexandru Ioan Cuza” University, Faculty of Physics, Iași, Romania

<sup>3</sup>Institute of Nuclear Research, Dubna, Russia

**14<sup>00</sup> - 16<sup>30</sup> Topic: *Environmental Management, Sustainable Development (S5)***

Lecture room: Senate Room, Technical University Main Building (Rectorate)

Chairmen:

**Prof. Igor Cretescu**, "*Gheorghe Asachi*" Technical University of Iași  
**Lecturer Cristina Modrogan**, University Politehnica of Bucharest

**S5-C01. Sustainable development management of rural and balneary tourism of the locality Ocna Sibiului, in the context of environmental protection**

*R. Iagăru, P. Iagăru, D. Domnica, L. Bardasuc*  
Alma Mater University of Sibiu, Sibiu, Romania

**S5-C02. Separation of biological interest aromatic intermediates using emulsion liquid membranes**

*A.R. Miron<sup>1</sup>, A.C. Nechifor<sup>1</sup>, A.A.K.K. Rikabi<sup>1,2</sup>, S.K. Tanczos<sup>1,3</sup>*

<sup>1</sup>University Politehnica of Bucharest, Bucharest, Romania

<sup>2</sup>Foundation of Technical Education, Baghdad, Iraq

<sup>3</sup>Sapientia University, Miercurea Ciuc, Romania

**S5-C03. Consumer opinions on future purchase of organic (eco) food in conjunction with environmental preservation and development. Case study: Sibiu County**

*M.D. Domnica, R. Iagăru, L. Bardasuc, I. Tălmăcean*

Alma Mater University of Sibiu, Sibiu, Romania

**S5-C04. Footprint instruments for environmental assessments of industrial companies: a case study of the dairy industry**

*S.A. Popa (Ene), C. Teodosiu, L. Pintilie, B. Robu, C. Musteret, O. Ghiuzan*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S5-C05. Infant methemoglobinemia incidence in Iași county between 2010 and 2014 with reference to the drinking water supply system**

*R. Mitroj, V. Boboc, L. Popoiu, D. Lepadatu*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania



**S5-C06. Adsorption of endocrine disruptors on exfoliated graphene nanoplateletes**

*E. Radu<sup>1</sup>, I. Ion<sup>2</sup>, F. Sirbu<sup>3</sup>, A.C. Ion<sup>2</sup>*

<sup>1</sup>National Research & Development Institute for Chemistry and Petrochemistry ICECHIM, Bucharest, Romania

<sup>2</sup>University POLITEHNICA of Bucharest, Bucharest, Romania

<sup>3</sup>"Ilie Murgulescu" Institute of Physical Chemistry of Romanian Academy, Bucharest, Romania

**S5-C07. Research concerning the pollution of groundwater with organic micro pollutants**

*L. Topliceanu<sup>1</sup>, I. Lucavetchi<sup>2</sup>, A. Amăriucă<sup>2</sup>*

<sup>1</sup>"Vasile Alecsandri" University of Bacău, Bacău, Romania

<sup>2</sup>Romanian Waters National Administration, Siret Water Basin Administration, Bacău, Romania

**S5-C08. Rural development through the optimization of the renewable energy potential**

*L. Topliceanu<sup>1</sup>, K. Sioulas<sup>2</sup>*

<sup>1</sup>"Vasile Alecsandri" University of Bacău, Bacău, Romania

<sup>2</sup>Centre for Renewable Energy Sources, Pikermi Attiki, Greece

**S5-C09. Environmental management plan developed for water quality in Goa mining region, India**

*R.K.Kamal, G.Singh, A. Perwez*

Indian School of Mines Dhanbad, Jharkhand, India

15<sup>00</sup>-18<sup>00</sup> WORKSHOP PAPERCON PROJECT

**New Materials and Techniques for Sustainable Conservation of Paper Heritage**

Lecture room: CH III, Faculty of Chemical Engineering and Environmental Protection

*Chairmen:*

**Prof. Elena Bobu**, "Gheorghe Asachi" Technical University of Iași

**Lecturer Florin Ciolacu**, "Gheorghe Asachi" Technical University of Iași

**W01. Non-conventional materials and Plasma Technique for Sustainable Solutions in Paper Heritage Conservation - PAPERCON Project**

*E. Bobu*

"Gheorghe Asachi" Technical University of Iași

**W02. Application of the ATR-FTIR and AFM tools in analysis of paper surface coated with different consolidation polymers**

*G. Cazacu<sup>1</sup>, G. Hitruc<sup>1</sup>, D. Ciolacu<sup>1</sup>, R. Nicu<sup>2</sup>, T. Malutan<sup>2</sup>*

<sup>1</sup> "Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania

<sup>2</sup> "Gheorghe Asachi" Technical University, Iași, Romania

**W03. Physical and mechanical properties of paper coated with chitosan derivatives**

*F. Ciolacu, T. Balan, R. Nicu*

"Gheorghe Asachi" Technical University of Iași

**W04. Antimicrobial properties of paper coated with chitosan derivatives**

*Raluca Nicu<sup>1</sup>, Elena Bobu<sup>1</sup>, Elena Ardelean<sup>2</sup>, S. Dunca<sup>2</sup>*

<sup>1</sup> "Gheorghe Asachi" Technical University of Iași

<sup>2</sup> "Alexandru Ioan Cuza" University of Iași

**W05. Dry decontamination of old paper documents by HF cold plasma treatments**

*A. M. Vlad<sup>1</sup>, D.E. Rusu<sup>1</sup>; E.G. Ioanid<sup>2</sup>, Elena Ardelean<sup>3</sup>, C. Tanase<sup>3</sup>*

<sup>1</sup> "Moldova" National Complex of Museums Iași, Romania

<sup>2</sup> "Petru Poni" Institute of Macromolecular Chemistry Iași, Romania

<sup>3</sup> "Alexandru Ioan Cuza" University of Iași

**W06. The effects of HF cold plasma treatments on paper strength properties**

F. Ciolacu<sup>1</sup>, M. I. Totolin<sup>2</sup>

<sup>1</sup>“Gheorghe Asachi” Technical University of Iași

<sup>2</sup>“Petru Poni” Institute of Macromolecular Chemistry Iași, Romania

**W07. Effects of HF cold plasma treatments on the printing inks from old paper documents**

C. M. Ursescu<sup>1</sup>, D.E. Rusu<sup>1</sup>, E.G. Ioanid<sup>2</sup>, Gh. Niculescu<sup>3</sup>

<sup>1</sup>“Moldova” National Complex of Museums Iași, Romania

<sup>2</sup>“Petru Poni” Institute of Macromolecular Chemistry Iași, Romania

<sup>3</sup>National Museum of Romanian History, Bucharest, Romania

**W08. Cold HF plasma plant with extended functionality: construction and functional optimization**

M. I. Totolin<sup>1</sup>, V. Frunza<sup>2</sup>, G. Savin<sup>2</sup>, G. Cazacu<sup>1</sup>

<sup>1</sup>“Petru Poni” Institute of Macromolecular Chemistry, Iași, Romania

<sup>2</sup>Impex Romcatel, Research and Design SA, Iași, Romania

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

Poster Session

Hall of Faculty of Chemical Engineering and Environmental  
Protection

## ***S2. Innovative Processes and Technologies***

**S2-P01. MLP and MLR models used to predict excess molar volume based on experimental refraction index determinations**

*C. Lisă, S. Curteanu, G. Lisă*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S2-P02. Flow cytometry – technique used for live/dead cells discrimination in batch growth of a bacterial population**

*A. Tănase, V. Gogulancea, G. Isopencu, V. Lavric*

Politehnica University of Bucharest, Bucharest, Romania

**S2-P03. Diffusion in polymer composite membranes**

*N. Bunduc, I. Mămăligă*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S2-P04. Polymer encapsulation of aluminium pigments**

*C.S. Bildea<sup>1</sup>, E. Zaharia<sup>1</sup>, I. Dragnea<sup>2</sup>*

<sup>1</sup>University Politehnica of Bucharest, Bucharest, Romania

<sup>2</sup>S.C. AlbaAluminiu Ltd., Zlatna, Alba, Romania

**S2-P05. Concentration of  $\alpha$ -linolenic acid methyl ester from methanol transesterified camelina oil**

*N.G. Ștefan<sup>1</sup>, V. Pleșu<sup>1</sup>, P. Iancu<sup>1</sup>, A. Toma<sup>1</sup>, E. Ștefan<sup>2</sup>*

<sup>1</sup>University POLITEHNICA of Bucharest, Centre for Technology Transfer for the Process Industries, Bucharest, Romania

<sup>2</sup>The National Institute for Research & Development in Chemistry and Petrochemistry - ICECHIM, Bucharest, Romania

**S2-P06. Kinetic study of the thermal dehydration of wastes of plaster moulds from fine ceramic industry**

*L. Lazăr, G. Lisă, I. Balasanian*

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

2014

**S2-P07. The performances and advanced characterization of CRYSTAL-RIGHT™ CR100 zeolite used in the water softening process**

L. Lazăr<sup>1</sup>, B. Bandrabu<sup>2</sup>, R.E. Tataru-Fărmuș<sup>1</sup>, M. Droboță<sup>3</sup>, S.G. Stroe<sup>4</sup>,  
G. Gutt<sup>4</sup>

<sup>1</sup>"Gheorghe Asachi" Technical University of Iași, Iași, Romania

<sup>2</sup>Hach Lange SRL, București, Romania

<sup>3</sup>"Petru Poni" Institute of Macromolecular Chemistry of Romanian Academy, Iași, Romania

<sup>4</sup>"Stefan cel Mare" University of Suceava, Suceava, Romania

**S2-P08. Influence of the drying and extraction methods on caraway (*Carum carvi* L.) essential oil yield and limonene and carvon relative concentration**

C. D. András<sup>1</sup>, R. V. Salamon<sup>1</sup>, A. Szép<sup>1</sup>, I. Volt<sup>2</sup>, I. Barabás<sup>1</sup>

<sup>1</sup>Sapientia Hungarian University of Transylvania Cluj-Napoca, Romania

<sup>2</sup>"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S2-P09. The study of stages and operations involved in the preservation and restoration of a xiii century icon, on textile support**

M. Munteanu<sup>1</sup>, I. Sandu<sup>1,2</sup>, V. Vasilache<sup>1,2</sup>, I.C.A. Sandu<sup>3</sup>

<sup>1</sup>"Al. I. Cuza" University of Iași, ARHEOINVEST Platform, Iași, Romania

<sup>2</sup>Romanian Inventors Forum, Iași, Romania

<sup>3</sup>Universidade de Évora, Palácio do Vimioso, Largo Marquês de Marialva, Évora, Portugal

**S2-P10. Characterization of some lignocellulosic wastes as potential feedstock for fiber-based biorefinery**

A. C. Puițel<sup>1</sup>, B.M. Tofănică<sup>1</sup>, P.V. Puiu<sup>2</sup>, N. Marin<sup>1</sup>, D. Gavrilescu<sup>1</sup>

<sup>1</sup>"Gheorghe Asachi" Technical University of Iași, Iași, Romania

<sup>2</sup>S.C. EcoPaper. S.A. Zărnești, Brasov, Romania

### S3. Advanced Materials and Polymers

#### S3-P01. Alginate - lignosulphonate films as bioactive coatings

R.P. Dumitriu<sup>1,2</sup>, I. Stoica<sup>1,2</sup>, G. Cazacu<sup>2</sup>

<sup>1</sup>Polytechnic University of Bucharest, Bucharest, Romania

<sup>2</sup>"Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania

#### S3-P02. Nanoporous materials influence on the chemical composition of Merlot and Cabernet Sauvignon

C. E. Luchian<sup>1</sup>, V. V. Cotea<sup>1</sup>, C. Colibaba<sup>1</sup>, M. Codreanu<sup>1</sup>, M. Niculaua<sup>2</sup>, A. Patraș<sup>1</sup>

<sup>1</sup>The University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad", Iași, Romania

<sup>2</sup>Oenological Research Center - Romanian Academy, Iași, Romania

#### S3-P03. Effect of carbon based materials treatments on Cabernet Sauvignon wine composition

M. Codreanu<sup>1</sup>, V. V. Cotea<sup>1</sup>, C. Luchian<sup>1</sup>, M. Niculaua<sup>2</sup>, C. I. Zamfir<sup>1</sup>

<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad", Faculty of Horticulture, Iași, Romania

<sup>2</sup>Romanian Academy, Iași Branch, Oenology Research Centre, Iași, Romania

#### S3-P04. Bi-based carbon xerogels - carbon paste electrode for Cd<sup>2+</sup> detection

A. R. Deac, C. L. Cotet, G. L. Turdean, L. M. Muresan

"Babes- Bolyai" University, Cluj-Napoca, Romania

#### S3-P05. Physicochemical behavior of exfoliated graphite nanoplatelets dispersed in tetrahydrofuran and dimethylformamide environments from T = (293.15 to 308.15) K

F. Sirbu<sup>1</sup>, E. Radu<sup>2</sup>, A. C. Ion<sup>3</sup>

<sup>1</sup>"Ilie Murgulescu" Institute of Physical Chemistry of Romanian Academy, Bucharest, Romania;

<sup>2</sup>National Research & Development Institute for Chemistry and Petrochemistry ICECHIM, Bucharest, Romania

<sup>3</sup>POLITEHNICA University of Bucharest, Romania

#### S3-P06. The synthesis and characterization of hybrid organic/inorganic composites polyimide/iron oxide (Fe<sub>3</sub>O<sub>4</sub>/γ-Fe<sub>2</sub>O<sub>3</sub>)

S. L. Nica<sup>1</sup>, V. Nica<sup>2</sup>, C. Hulubei<sup>1</sup>, S. Ioan<sup>1</sup>

<sup>1</sup>"Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania

<sup>2</sup>"Alexandru Ioan Cuza" University, Iași, Romania

**S3-P07. Porous microspheres and transparent materials based on partially alicyclic copolyimides**

*C. Hulubej<sup>1</sup>, C.D. Vlad<sup>1</sup>, I. Stoica<sup>1</sup>, D. Popovici<sup>1</sup>, G. Lisa<sup>2</sup>, S. L. Nica<sup>1</sup>, A.I. Barzic<sup>1</sup>, S. Ioan<sup>1</sup>*

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<sup>2</sup> "Gheorghe Asachi" Technical University, Iași, Romania

**S3-P08. PNiPAM-functionalized mesoporous carbon for adsorption of vitamin B2**

*M. Ignat<sup>1,2</sup>, M. Fortuna<sup>1</sup>, L. Sacarescu<sup>1</sup>, V. Harabagiu<sup>1</sup>*

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**S3-P09. Upon synthesis of poly(maleic anhydride-co-3, 9-divinyl-2, 4, 8, 10-tetraoxaspiro (5.5) undecane) copolymer with antioxidant character and possibilities for bioconjugation**

*A. P. Chiriac, L. E. Nita, N. Tudorachi, V. Balan, I. Neamtu, A. Diaconu*

"Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania

**S3-P10. Poly(maleic anhydride-co-3, 9-divinyl-2, 4, 8, 10-tetraoxaspiro (5.5) undecane) copolymer-based magnetic composites: Potential vectors for remote-controlled bioactive substance release**

*L. E. Nita, A. P. Chiriac, I. Neamtu, N. Tudorachi, A. Diaconu*

"Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania

**S3-P11. Testing of rheological properties of quaternized polysulfones/polyvinyl alcohol blends for upgrading biomembranes**

*A. Filimon, R. M. Albu, E. Avram, S. Ioan*

"Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania

**S3-P12. Transport phenomena of polymer mixtures solution based on quaternized polysulfones**

*A. M. Dobos, A. Filimon, E. Avram, S. Ioan*

"Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania

**S3-P13. Blood components adhesion to cellulose acetate phthalate/hydroxypropyl cellulose substrate**

*A. M. Dobos<sup>1</sup>, M. D. Onofrei<sup>1</sup>, E. G. Ioanid<sup>1</sup>, S. Ioan<sup>1</sup>*

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**S3-P14. Phosphorus-functionalized polysulfones with antithrombogenic activity for potential biomedical application**

*L. I. Buruiana<sup>1</sup>, E. Avram<sup>1</sup>, A. Popa<sup>2</sup>, S. Ioan<sup>1</sup>*

<sup>1</sup> "Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania

<sup>2</sup> Institute of Chemistry of Romanian Academy, Timișoara, Romania

### **S3-P15. Cosmeceutical cream with higher therapeutic effect based on natural product enoxil**

*T. Lupascu, A.I.Gonta, N. Timbaliuc*

Institute of Chemistry, Academy of Sciences of Moldova, Chisinau, Republic of Moldavia

### **S3-P16. Use of layered double hydroxides to remove anionic dyes from aqueous solutions**

*M. C. Alexandrica<sup>1</sup>, D. Nistor<sup>2</sup>, I. Andries<sup>1</sup>, M. I. Popa<sup>1</sup>*

<sup>1</sup>“Gheorghe Asachi” Tehnical University of Iași, Iași, Romania

<sup>2</sup>University “Vasile Alecsandri”, Bacău, Romania

### **S3-P17. In vitro cytotoxicity and enzymatic degradation of new chitosan-based scaffolds**

*A. G. Rusu<sup>1</sup>, M. I. Popa<sup>1</sup>, M. C. Alexandrica<sup>1</sup>, L. Verestiuc<sup>2</sup>, M. Butnaru<sup>2</sup>*

<sup>1</sup>“Gheorghe Asachi” Tehnical University of Iași, Iași, Romania

<sup>2</sup>“Grigore T.Popa” University of Medicine and Pharmacy, Iași, Romania

### **S3-P18. Special wrapping papers. Corrosion test**

*T.Măluțan<sup>1</sup>, A. M. Axinte<sup>1,2</sup>, V. Negreanu<sup>2</sup>*

<sup>1</sup>“Gheorghe Asachi” Tehnical University of Iași, Iași, Romania

<sup>2</sup> Pulp and paper research and development institute – Ceprohart SA/ Suceava Branch/Romania

### **S3-P19. Comparative study of prehydrolysis methods for vegetal materials**

*C. Malutan, A. Panzariu, T. Malutan*

“Gheorghe Asachi” Tehnical University of Iași, Iași, Romania

### **S3-P20. BaFe<sub>12</sub>O<sub>19</sub> formation by citrate method**

*R. Băbuță, I. Lazău, C. Păcurariu*

Politehnica University Timișoara, Timișoara, Romania

### **S3-P21. Optimisation of the blank shape and dimensions in order to reduce material scrap from deep drawing processes**

*A. Albut*

“Vasile Alecsandri” University of Bacău, Bacău, Romania

### **S3-P22. Modelling of fracture phenomenon in case of composite materials reinforced with short carbon fibers**

*R. Caliman*

“Vasile Alecsandri” University of Bacău, Bacău, Romania



**S3-P23. Mathematical modelling of mechanical behaviour of cellulose-based fibres exposed to gamma rays and hydrothermal treatment**

*A. Olaru<sup>1</sup>, M. Geba<sup>1</sup>, C.M. Ursescu<sup>1</sup>, T.Măluțan<sup>2</sup>*

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<sup>2</sup>Gheorghe. Asachi' Technical University of Iași, Iași, Romania

ICCE 2014

**Friday, 07 November 2014**

Lecture room: Faculty Council Room, Faculty of Chemical Engineering and Environmental Protection

**9<sup>30</sup> - 10<sup>10</sup>** Plenary Lecture: **Prof. Ionel Mangalagiu**, “Alexandru Ioan Cuza” University of Iași

### **NITROGEN HETEROCYCLES: AN EFFICIENT WAY TOWARDS “TARGET COMPOUNDS” OF POTENTIAL INTEREST AND MOLECULAR LOGIC DEVICES**

*Chairman: Prof. Ionel Marcel Popa, “Gheorghe Asachi” Technical University of Iași*

**10<sup>10</sup> - 10<sup>50</sup>** Plenary Lecture - **Prof. Shin'ichi Nakatsuji**, University of Hyogo

### **RECENT PROGRESS IN THE DEVELOPMENT OF NEW ORGANIC RADICAL BATTERIES**

*Chairman: Prof. Dan Scutaru, “Gheorghe Asachi” Technical University of Iași*

**10<sup>50</sup> - 11<sup>00</sup>** Coffee Break

**11<sup>00</sup> - 13<sup>00</sup>** **Poster Session**

Hall of Faculty of Chemical Engineering and Environmental Protection

## **S5. Environmental Management, Sustainable Development**

### **S5-P01. Biosorption of antimony by brown algae**

*G. Ungureanu, S. Santos, R. Boaventura, C. Botelho*

LSRE-Laboratory of Separation and Reaction Engineering, Porto, Portugal

**S5-P02. Sorption behavior of anionic dye Congo red in the soil environment**

*C. Smaranda<sup>1</sup>, B. Drăgoi<sup>1</sup>, D. Bulgariu<sup>2</sup>, M. Gavrilescu<sup>1,3</sup>*

<sup>1</sup>"Gheorghe Asachi" Technical University of Iași, Iași, Romania

<sup>2</sup>"Al.I.Cuza" University of Iași, Iași, Romania

<sup>3</sup>Academy of Romanian Scientists, Bucharest, Romania

**S5-P03. Recycling biomass waste to compost for heavy metals adsorption from wastewaters**

*I.C. Manciulea, G.L. Dumitresu, C. Zaha*

Centre: Renewable Energy Systems and Recycling, Brasov, Romania

**S5-P04. Comparison of ALR, BC and packed column performances used for CO<sub>2</sub> removal from gas mixtures**

*P. Cozma<sup>1</sup>, W. Wukovits<sup>2</sup>, I.M. Simion<sup>1</sup>, R.M. Hlihor<sup>1</sup>, A. Friedl<sup>2</sup>, I. Mămăligă<sup>1</sup>, M. Gavrilescu<sup>1,3</sup>*

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<sup>2</sup>Vienna University of Technology, Vienna, Austria

<sup>3</sup>Academy of Romanian Scientists, Bucharest, Romania

**S5-P05. Energy efficiency study case on biogas production in industrial anaerobic digesters at municipal wastewater treatment plant**

*A. Zuza<sup>1</sup>, P.Ș. Agachi<sup>1</sup>, C. Deac<sup>2</sup>*

<sup>1</sup>Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania

<sup>2</sup>Technical University of Cluj-Napoca, Cluj-Napoca, Romania

**S5-P06. Influence of the polypropylene [PPR] pipes characteristics on the drinking water quality (I)**

*N. Damian, S. Patachia*

Transilvania University of Brasov, Brasov, Romania

**S5-P07. The use of ion exchange processes on weak acid resins for treatment of wastewaters containing copper ions**

*C. Modrogan, A.R. Miron, O.D. Orbulet, C. Costache, D.G. Apostol*

University "Politehnica" of Bucharest, Bucharest, Romania

**S5-P08. Complex mathematical modelling of the removal of radionuclide using ion exchange columns**

*D. Dinculescu, C.L. Gîjju, V. Lavric*

University Politehnica of Bucharest, Bucharest, Romania

**S5-P09. Selective recovery of phenolic derivatives through the technique of liquid membrane**

*I. Diaconu<sup>1</sup>, C.M. Mirea<sup>1,2</sup>, E. Ruse<sup>1</sup>, G.Nechifor<sup>1</sup>*

<sup>1</sup>Politehnica University of Bucharest, Bucharest, Romania

<sup>2</sup>Arcuda Laboratory, Giurgiu, Romania

**S5-P10. Selection of advanced wastewater treatment processes for effluent reclamation based on multi-criteria decision analysis**

D. Gavrilăscu (Cailean)<sup>1</sup>, C. Teodăsiu<sup>1</sup>, G. Barjoveanu<sup>1</sup>, D. Arsene<sup>1</sup>, A. Chelba<sup>1</sup>, I. Chihaitei<sup>1</sup>, I. Dascalescu<sup>2</sup>

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<sup>2</sup>SC APAVITAL SA Iași, Iași, Romania

**S5-P11. Supercritical fluid technology applied for polyphenols extraction from *Picea abies* bark: a preliminary study**

A.I. Talmăciu, I. Volf, I. Mămăliga, V.I. Popa

"Gheorghe Asachi" Technical University of Iași, Iași, Romania

**S5-P12. Correlation between the Danube hydrological regime and nearby groundwater levels in characteristic sections**

A.M. Anghel, Deák Gy., M. Ilie, G. Ghiță, B. Petculescu, F. Marinescu, B. Uritescu

National Institute for Research and Development in Environmental Protection, Bucharest, Romania

**S5-P13. Phenol removal from wastewaters using Ce, Ni and Co doped carbon xerogel**

R.C. Pleșa Chicinaș, L.C. Coteș, A. Măicăneanu

Babes-Bolyai University, Cluj-Napoca, Romania

**S5-P14. Influence of different harvest periods on the phenolic profile and content of leaf, stem and fruit extracts of bilberry**

O.C. Bujor<sup>1,2,3</sup>, C. Mihăilescu<sup>1</sup>, M. Loonis<sup>2,3</sup>, I. Volf<sup>1</sup>, V.I. Popa<sup>1</sup>, C. Dufour<sup>2,3</sup>

<sup>1</sup>"Gheorghe Asachi" Technical University of Iași, Iași, Romania

<sup>2</sup>Université d'Avignon, Avignon, France

<sup>3</sup>Université d'Avignon INRA, Avignon, France

**S5-P15. A comparative life cycle assessment of three types of agricultural waste applied for Cd(II) biosorption**

R.M. Hlihor<sup>1</sup>, I.M. Simion<sup>1</sup>, C. Ghinea<sup>1</sup>, E.D. Comanita<sup>1</sup>, L.C. Apostol<sup>1,2</sup>, P. Cozma<sup>1</sup>, M. Gavrilăscu<sup>1,3</sup>

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<sup>2</sup>"Stefan cel Mare" University of Suceava, Suceava, Romania

<sup>3</sup>Academy of Romanian Scientists, Bucharest, Romania

**S5-P16. Evolution of trophic parameters from Amara Lake**

O. Axinte<sup>1</sup>, I.S. Bădescu<sup>1</sup>, C. Stroe<sup>2</sup>, V. Neacsu<sup>3</sup>, L. Bulgaru<sup>1</sup>

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<sup>2</sup>Environmental Protection Agency, Ialomița, Romania

<sup>3</sup>The Water Resources of the Water Management System Buzau, Ialomita, Romania

### **S5-P17. Management possibilities of plants used for phytoremediation of soils polluted with heavy metals**

*I.S. Bădescu, O. Axinte, L. Bulgariu*

“Gheorghe Asachi” Technical University of Iași, Iași, Romania

### **S5-P18. Oxy-combustion and CO<sub>2</sub> combustion of swine manure**

*D. López-González<sup>1</sup>, M.M. Parascanu<sup>2</sup>, M. Puig-Gameiro<sup>3</sup>, G. Soreanu<sup>2</sup>, M. Fernandez-Lopez<sup>3</sup>, A. Avalos-Ramírez<sup>4</sup>, J.L. Valverde<sup>3</sup>, L. Sanchez-Silva<sup>3</sup>*

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<sup>3</sup>University of Castilla-La Mancha, Ciudad Real, Spain.

<sup>4</sup>Centre National en Électrochimie et en Technologies Environnementales, Québec, Canada

### **S5-P19. Catalytic and non-catalytic thermochemical conversion of biologically treated manure**

*M. Fernandez-Lopez<sup>1</sup>, M.M. Parascanu<sup>2</sup>, D. López-González<sup>3</sup>, G. Soreanu<sup>2</sup>, A. Avalos-Ramírez<sup>4</sup>, P. Sanchez<sup>1</sup>, J.L. Valverde<sup>1</sup>, L. Sanchez-Silva<sup>1</sup>*

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<sup>4</sup>Centre National en Électrochimie et en Technologies Environnementales, Québec, Canada

### **S5-P20. Evaluation of solid waste management scenarios using analytic hierarchy process (AHP) technique**

*C. Ghinea<sup>1,2</sup>, D.E. Comanita<sup>1</sup>, M. Petraru<sup>1</sup>, P. Cozma<sup>1</sup>, M. Gavrilescu<sup>1,3</sup>*

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<sup>2</sup>“Stefan cel Mare” University of Suceava, Suceava, Romania

<sup>3</sup>Academy of Romanian Scientists, Bucharest, Romania

### **S5-P21. Ecotoxicological evaluation of erythrosine B and its degradation products**

*L.C. Apostol<sup>1,2</sup>, C. Smaranda<sup>2</sup>, M. Diaconu<sup>2</sup>, M. Gavrilescu<sup>2,3</sup>*

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<sup>3</sup>Academy of Romanian Scientists, Bucharest, Romania

**S5-P22. Challenges and opportunities in green plastics: an assessment using the ELECTRE decision-aid method**

E.D. Comaniță<sup>1</sup>, R.M. Hlihor<sup>1</sup>, C. Ghinea<sup>1</sup>, I.M. Simion<sup>1</sup>, C. Smaranda<sup>1</sup>, L. Favier<sup>2</sup>, M. Gavrilesu<sup>1,3</sup>

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**S5-P23. Heavy metal pollution on the Romanian Black Sea shore: an environmental impact and risk assessment**

O. Jitar<sup>1</sup>, C. Teodosiu<sup>1</sup>, B. Robu<sup>1</sup>, S. Strungaru<sup>2</sup>, M. Nicoara<sup>2</sup>, G. Plavan<sup>2</sup>

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**S5-P24. Enhancing the Fenton process by UV light applied in textile wastewater treatment**

A. Simion<sup>1</sup>, I. Cretescu<sup>1</sup>, D. Lutić<sup>2</sup>, C. Luca<sup>1</sup>, I. Poulivos<sup>3</sup>

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<sup>3</sup>Aristotle University of Thessaloniki, Thessaloniki, Greece

**S5-P25. Sustainability indicators associated to the ecological footprint in construction and demolition waste management**

I.M. Simion<sup>1</sup>, S. Zanni<sup>2</sup>, R.M. Hlihor<sup>1</sup>, P. Cozma<sup>1</sup>, D.L. Sobariu<sup>1</sup>, S. Bamont<sup>2</sup>, A. Bonol<sup>2</sup>, M. Gavrilesu<sup>1,3</sup>

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<sup>3</sup>Academy of Romanian Scientists, Bucharest, Romania

**S5-P26. A new strategy for pentachlorophenol monitoring in water using ultra-high-performance liquid chromatography-tandem mass spectrometry**

Y. Kadmi<sup>1,2</sup>, L. Favier<sup>1,2</sup>, A. Simion<sup>3</sup>, L. Rusu<sup>3</sup>, M. Harja<sup>4</sup>, D. Wolbert<sup>1,2</sup>

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<sup>3</sup>“Vasile Alecsandri” University of Bacău, Bacău, Romania

<sup>4</sup>“Gheorghe Asachi” Technical University of Iași, Iași, Romania

**S5-P27. Mathematical modeling of a fixed bed catalytic reactor for the reduction of NO by H<sub>2</sub>**

M. Mihet<sup>1</sup>, V.M. Cristea<sup>2</sup>, A.M. Cormos<sup>2</sup>, M.D. Lazar<sup>1</sup>, P.S. Agachi<sup>2</sup>

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<sup>2</sup>Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania

**S5-P28. Full Saint Venant hydraulic modelling, simulation and calibration of a 5 water reservoir system in Jijia River catchment**

*M.L. Mogos-Kirner, T.H. Phạm, M.V. Cristea, P.S. Agachi*

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**S5-P29. Heavy metals and PAHs characteristics of the ashes from Unchahar thermal power plant**

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Indian School of Mines, Jharkhand, India

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