european chitin society

NEWSLETTER

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Editorial

The main topic of this Newsletter is about the 13th International EUCHIS Conference, held together with the 8th Symposium of the Iberoamerican Chitin Society (SIAQ) in Seville, Spain, May 31 – June 3, 2017, preceded by a Satellite Companies Meeting in Madrid (p. 7), and followed by a Young Researchers Symposium (p. 8). Four posters were selected for Poster awards, sponsored by *Molecules*, a journal published by MDPI (Multidisciplinary Digital Publishing Institute), and the 2017 EUCHIS Prix Braconnot was awarded to a young scientist from Germany (p. 11). In addition, EUCHIS gave partial support to two young scientists from Italy and India, covering part of their expenses for coming to Seville (p. 12). Funds were available for at least four more travel awards, but no other applications were received. We hope this will change in the future.

Minutes of the General Assembly and two Board meetings are included (pp. 15, 16, and 18). There was a small change of official seat of EUCHIS, requiring a modification of the Statutes (see http://euchis.org/wp-content/uploads/2017/10/EUCHISStatutes_2017.pdf) and renewal of the registration at the Préfecture in France. The process has been finalized recently, thanks to the invaluable help and expertise of Mme. Patricia Odet in Lyon in handling the bureaucracy involved.

Financial Reports for the years 2015 and 2016 are shown (p. 19), and a survey of EUCHIS members by country and status is given (p. 20).

A brief report on the 6th Indian Chitin and Chitosan Society Symposium (6th ICCSS), convened jointly with the International Conference on Biotechnological Aspects of Chitosan and Chitooligosaccharides (ICBACC) in the School of Life Sciences, University of Hyderabad, India. This meeting was attended by several EUCHIS members, who had the chance to travel to India in connection with an ongoing research collaboration.

An inquiry from an Indian scientist for a postdoc position is at the end. Could it be an idea to include job ads on a regular schedule?

An update of member's publications will appear in the next issue, scheduled for early 2018. The next EUCHIS meeting will be organized by the Tyndall National Institute in Cork, Ireland, in 2019, and we hope to publish information on this, soon.

Thanks to all who contributed to this Newsletter. Enjoy reading, tell us what you like and what you do not like, what you ae missing, what we could improve. Please contribute abstracts of theses from your students, current views in chitin science, opinions and debates in the forum. Let all members share your experience and let them profit from your expertise.

Münster and Bonn, Oct. 15, 2017

Bruno M. Moerschbacher
Martin G. Peter

13th EUCHIS / 8th SIAQ

The 13th International Conference of the European Chitin Society and the 8th Symposium of the Iberoamerican Chitin Society (SIAQ) were organized in Seville, Spain, May 31 - June 3, 2017. It was the first jointly co-organized EUCHIS/SIAQ event. Chair-Persons were Prof. Angeles Heras (President of EUCHIS), Prof. Jaime Lizardi (President of SIAQ), and by Prof. Francisca Cabrera and Dr. Inmaculada Aranaz (Local Organizing Committee). It was sponsored by the University of Seville, Universidad Complutense de Madrid, HMC GmbH (Germany), the Mizutani Foundation for Glycoscience (Japan), Primex (Iceland), Carlo Erba (Spain), IDEBIO (Spain), Norsur (Spain), Ayuntamiento de Sevilla, DICSA (Spain), INFIQUS (Spain), and the journal *Molecules* (MDPI).

To say it in the beginning, it was a perfectly organized meeting, scientifically as well as with respect to the Social Programme. Prof. Miguel A. Castro Arroyo, Rector of Universidad de Sevilla, accompanied by the conference Chairs, presided over the opening ceremony at the Faculty of Chemistry of the University of Seville, venue of the event, and after delivering their respective addresses, declared formally inaugurated the scientific sessions.

The scientific programme encompassed three plenary lectures, 14 invited and 22 selected oral presentations, six flash communications, and 66 Posters. Satellite events took place as a Companies Meeting held at Universidad Complutense de Madrid (UCM), and a Young Researchers Symposium following the Conference in Seville (p. 7).

Plenary Lectures: *Waldo Argüelles Monal* (Mexico) presented recent advances in the preparation of novel chitosan derivatives by use of either furan "click chemistry" or by grafting of thermosensitive polymers (e.g. poly-NIPA or poly-*N*-vinylcaprolactam). *Hermenegildo García* (Spain) reported on the use of chitosan as precursor of doped graphene 2D- and 3D-related materials single- or few- layered *N*-doped graphene films and their catalytic, photocatalytic and photoelectrocatalytic properties. *Laurent David* (France) covered his latest research on the development of chitosan-based hydrogel bioreactors loaded with living cells or tissue fragments to generate a wide range of shapes (e.g. sealed compartments, tubes) and biomaterials (e.g. vascular and cartilage substitutes) which can be used for e.g. endothelialization, cellular amplification in monocultures or separated co-cultures (fibroblasts, chondrocytes).

Invited and selected oral presentations were given in ten parallel sessions:

1. Advances in Chemistry of Chitin and Chitosans

J.-i. Kadokawa (Japan) discussed the advances of chemical derivatization of chitin in ionic liquid solvents. *M. Anderson* (Sweden) presented a lecture on heterogeneous and homogeneous deacetylated chitosans. The role of the *N*-acetylation pattern of chitosan on the inflammatory and cytotoxic response was disucssed in the light of the experimental evidence

gathered on random (homogeneously reacetylatyed) *versus* blockwise (heterogenously deacetylated) chitosans. The lecture propitiated a subsequent discussion with Bruno Moerschbacher that brought to light the pioneering work of Kjell Varum (whose premature and sad decease was announced during the Conference, see Newsletter No. 40). *T.-i. Son* (Rep. Korea) closed the session with a lecture on UV/VIS light photo-reactive chitosans. He presented a novel approach to immobilize proteins based on the synthesis of chitosan derivatives amenable for this type of chemistry.

2. Food Technology and Agriculture

V. Coma (France) elaborated on chitin-glucan complexes from fungi as food packing materials. A high glucan content is positively correlated with high antioxidant and low antilisterial activity. *F. Lopez-Moya* (Spain) found that combination of chtisan with beneficial biocontrol nematophagous fungi enhances colonisation of tomato roots, reducing infection caused by plant pathogenic nematodes. Chitosan also induces accumulation of auxins via the tryptophan dependent pathway and also causes changes in cell division in the plant root meristem. *M. Bardosova* (Ireland) investigated organic-inorganic composites based on chitosan, crosslinked with tetraethyl orthosilicate (TEOS), and their mechanical and antimicrobial properties.

3. New methods to Chitin, Chitosans and Oligosaccharides Production

L.A. Berglund (Sweden) studied the preparation and deacetylation of 4 nm chitin nanofibrils to obtain novel materials with bactericidal function. *C. Peniche* (Cuba) developed a procedure for demineralization of deproteinized lobster shells with CO_2. *C. Hadad* (France) investigated the degradation of chitin residues with chitinase in room temperature ionic liquids. *T. Vasilieva* (Russia) depolymerized chitin by means of low temperature electron-beam plasma which also effects partial deacetylation.

4. Advances in Physical-chemistry and Interactions

S. Bratskaya (Russia) presented an account on chitosan-metal interactions in solution. The controlled degradation of chitosan is driven by the reduction of Au(III) to Au(0) and on the sorption of Au(III) on cross-linked chitosan derivatives, with emphasis on the role of type of chelating groups. *F. Goycoolea* (UK) spoke about the use of chitosans in gene delivery and on the importance of the structure of the polymer the biological performance. He then addressed the new results on the use of chitosan nanocapsules to induce the aggregation of *E. coli* Top 10 bacteria. *S. Schwartz* (Germany) presented a talk on the use of chitosan powder and beads for adsorption of metal ions from mining industrial effluents. *A. Mora-Boza* (Spain) gave a lecture on the use of hydrogel membranes comprised by semi-interpenetrating networks of chitosan and hyaluronan. The properties of these systems demonstrated their biocompatibility and potential use as novel biomaterials. Flash talks by L. David (on behalf of *A. Osorio-Madrazo*, Germany) on bio-inspired chitosan anisotropic chitosan hydrogels and their potential in intervertebral disc repair. *B. García-Galán* (Mexico) addressed the preparation of hydrogel beads of chitosan-poly(vinyl alcohol) by use of luminescent discharge plasma and their potential utilization as dye adsorbents to decontaminate industrial effluents, as an environmentally friendly alternative.

5. NanoBioEngineering of Bioinspired Chitosans and Chitooligomers (EU 7th FP, # 613931)

B. Moerschbacher (Germany) open the session summarizing the progress achieved on biotechnological methods to generate partially acetylated chitosan oligosaccharides (paCOS) with precisely defined structures, either by *in vitro* biorefinery approaches with enzymes (chitinases, chitosanaes and chitin deacetylases), or by *in vivo* cell-factories using genes coding for chitin synthases and chitin deacetylases. As a prerequisite for understanding of enzyme actions and structure-bioactivity relatioships, the paCOS were carefully characterized by means of a novel UHPLC-ESI-MS^n methodology. *A. Planas* (Spain) gave insights on the subsite capping model of chitin deacetylases (CDAs) to account for the mode of action of CDA on both polymers and chito-oligosaccharides, and how this understanding underpins the

pursuit of novel bioinformatic and enzyme engineering approaches towards the production of paCOS with specific and novel acetylation patterns. *C. Gorzelanny* (Germany) discussed trapping of chitosan-based nanocapsules in blood vessels of primary melanomas *in vivo*. These studies have led to propose a new hypothesis that extends the limitations of the so-called enhanced permeation and retention effect whereby nanocapsules accumulate as a consequence of the interaction with the pro-coagulant *von Willenbrand* factor, and the potential of this effect for targeting of intra-tumoral vessel occlusions with chitosan nanocapsules as a novel therapeutic approach in cancer treatment.

6. Enzymology and Biomedical applications

M. Ueda (Japan) showed that *Paenibacillus* sp. ChiA had a higher affinity toward crystalline chitin than lytic polysaccharide monooxygenase (Pb-LPMO). Pb-LPMO boosted the activity of Pb-ChiA toward crystalline α-chitin, but not toward crystalline β-chitin. *K. Azuma* (Japan) evaluated the anti-inflammatory effect of chitin nanofibers (CNFs) in the prevention or treatment of atopic dermatitis skin lesions. *G. Tegl* (Austria) investigated the chitosan hydrolyzing activity of commercial cellobiohydrolases from *Trichoderma* and from *Hypocrea*, resulting in the production of differently deacetylated COS from chitosan of F_A 0.13 and M_w 2×10^5 g × mol^{-1}.

7. Legal Aspects of the Use of Chitin and Chitosan

C.M. Caramella (Italy) focused on the regulatory approval process as dictated by the European Union regulatory bodies. Devices, for example, products that incorporate animal source materials, such as chitosans of crustacean origin, are classified in the higher risk class, which necessitates developing alternative sources of chitosans and/or providing high quality and purity materials, together with the correct placement of chitosan based products in the right product category, to allow companies to develop innovative chitosan based products capable to meet unmet medical needs today, such as would healing, tissue repair or regenerative medicine. *I. Muñoz* (Denmark) presented, as part of the EU Nano3Bio project, the first life cycle assessment of chitin and chitosan production in India and Europe.

A special plenary section on Marketing and Funding Opportunities falls, in part, into the topics of session 7. *K. Richter* (Germany) summarized the new EU medical product regulations which became effective in April 2017, as a binding legislative act for all countries. In addition, there are innovations in ISO standards and ICH guidelines regarding chitosan-based medical products and pharmaceuticals in Europe and the USA. *A. Martínez de Altube* (Spain) reported on the application of chitosan-based products, in particular in combination with entomopathogenic nematodes, and gave a summary of the legal status of chitosan for use in agriculture in the European Union.

8. Catalysis and Biocatalysis

G. de Gonzalo (Spain) dealt with asymmetric catalysis processes. The use of ureidyl chitosan in cyanosilylation of carbonyl compounds and in the catalysis of C-C coupling reactions involving *E*-nitrostyrene and indole was presented. *G. David* (France), addressed the synthesis of derivatised chitosan oligomers via epoxy-amine and thiol-ene reactions. A portfolio of different derivatives based on this platform has been obtained. These included the synthesis of cyclic carbonates derived from quaternary ammonium derivatives under mild conditions, among other. *A. Primo* (Spain) addressed the orientation of 200 Cu_2O nanoplateletes upon grafting them in graphene of chitosan and alginate subjected to pyrolysis, exfoliation and ultrasonication. These films are able to 82% of oriented metal particles. The change of orientation upon reduction was also discussed in the light of the photocatalytic performance of these systems for water splitting to generate hydrogen using solar light.

9. Health Science

O.E. Rubilar (Chile) described noncovalent complexes of chitosan with polyphenolic antioxidants which can cross the blood-brain barrier und have potentially beneficial effects in combatting neurodegenerative diseases. *J. San Román* (Cuba) prepared chitosan/hyaluronan

complexes crosslinked with lysine isocyanate and nanoparticle blends of chitosan with poly(*N*-isopropylacrylamide) loaded with heparin for potential applications in regenerative medicine. *M. Anraku* (Japan) introduced biomaterials based on surface-deacetylated chitin nanofibers non-covalently linked with sulfobutyl ether β-cyclodextrin as a drug delivery system for prednisolone. *H. Tamura* (Japan) developed composite fibers of chitin/gelatin by wet spinning procedures as biodegradable sutures with excellent strength even in wet conditions. Two presentations on haemostatic devices were given: *M.H. Struszczyk* (Poland) on topical agents made from chitosan and alginates, covering also regulatory aspects and risk assessment, and *F. Saporito* (Italy) on sponges made from chitosan and hyaluronic acid or chondroitin sulfate and loaded with the antifibrinolytic tranexamic acid.

10. Technological Applications and Nanotechnology

M. Rinaudo (France) focused on the electrospinning of chitin and chitosan blended with poly(ethylene oxide) to generate nanofibers. The role played by the main parameters (e.g. the solution viscosity before the process, solvent conditions, molar mass of PEO, mass ratio of both components, and post-treatment neutralization conditions) on the physical characteristics of the nanofibers was thoroughly discussed. *G. Cardenas* (Chile) synthesized metal (Ag, Cu and Ag-Pd) nanoclusters supported on chitosan and hyaluronan using solvated metal atom dispersed method and their potential as antibacterials for *E.coli, S. aureus, S. epidermidis,* and *P. aeruginosa*. Toxicological assays were conducted in a rat model. *T. Delair* (France) gave a talk on polyelectrolyte complexes based on chitosan and dextran sulfate obtained under mild conditions as a route to formulating drug delivery systems able to overcome problems of stability in physiological conditions. Incorporation of Zn^{2+} enabled the cross-linking of the complexes. *S. Ifuku* (Japan) prepared chitin/polystyrene nanofibers obtained by hot-pressing process. To this end, chitin nanofibers were used to stabilise a styrene-in-water Pickering emulsion, and radical polymerized by AIBN. The advantages of this environmentally friendly process were discussed. *M. Collado-Gonzalez* (Spain) dealt with the stabilization of silk fibroin nanoparticles with chitosan (250 Kg × mol^{-1}; F_A 0.20). Experimental evidence along with blind docking calculations yielded new insights into the mechanisms of interaction at the molecular level. *C. Engwer* (Germany) presented the second flash talk on interactions of chitosan (26 Kg × mol^{-1}; F_A 0.32) based nanocapsules and a bacterial quorum sensing *E. coli* biosensor, highlighting the potential for pathogenic bacterial targeting and overcoming antibacterial resistance.

Even the best conference is worth little without an appealing **Social Programme**. The *Welcome Reception* was offered at the central court yard of the *Real Fábrica de Tabaco*, a magnificent 18th-century stone building that hosts the Rectorate of the University of Seville, accompanied by exquisite wines, tapas and cheeses of the rich Andalusian gastronomy. Friends and colleagues from Europe and Latin America met, networked and enjoyed a most beautiful afternoon and evening. On Thursday afternoon, participants were invited to visit the World Heritage *Reales Alcázares de Sevilla* and experienced a fabulous tour through the history and architecture of medieval ages based on Moorish Muslim Kings, and continued by the Spanish Royalties until present. The highlight of the conference dinner on Friday was an impassionate colorful Flamenco performance.

The last session of the conference was devoted to short talks given by the winners of Poster Awards (p. 10) and by the Braconnot Plenary Lecture (p. 11). The conference closed with the announcement of the passing away of Kjell M. Vårum, notice of the new Board of EUCHIS, short presentations on future events, i.e. *Hiroshi Tamura* on 14th ICCC / 12th APCCS in Osaka, Japan, 2018 (see also Newsletter No. 39) and *Maria Bardosova* on 14th EUCHIS, to be organized in Cork, Ireland, 2019. Last not least, appreciation and cordial thanks to the local organization committee and to all the good ghosts who worked hard in the background to make this conference so successful were expressed before the formal closing.

Francisco M. Goycoolea
Martin G. Peter

Satellite Companies Meeting

The last EUCHIS Conference was celebrated jointly with the Iberian-American Chitin Society (SIAQ) in Seville, organized by the universities of Seville, Alicante and Madrid´s Complutense. This was a unique opportunity to gather researchers and companies from both sides of the Atlantic Ocean and an advantage of this opportunity was taken to organize the satellite event "Companies-Experts meeting". This activity was held at Complutense University in Madrid before the start of the main conference.

- Why a "Companies-Experts meeting" as a satellite event?

The number of companies interested in Chitin and Chitosan is increasing year after year and some of them are members or have a relationship with EUCHIS and/or SIAQ. The x companies have their own demands, not all being interested in a Congress format and they prefer a more business –like, specific and shorter environment.

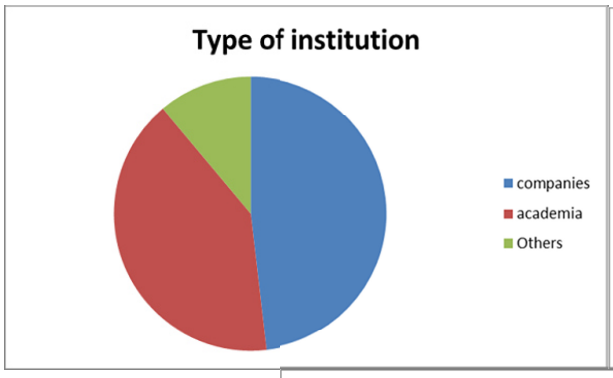
There are specific funding opportunities from EU and CYTED programs that are oriented to research-industry consortiums. This type of event will help to promote robust consortiums, helping researchers and companies to find the most suitable partners.

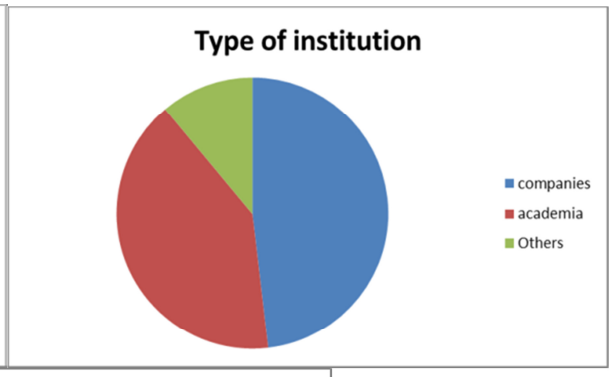
Some companies are searching for experts as consultants or they need some specific research or facilities that can be found in Academia.

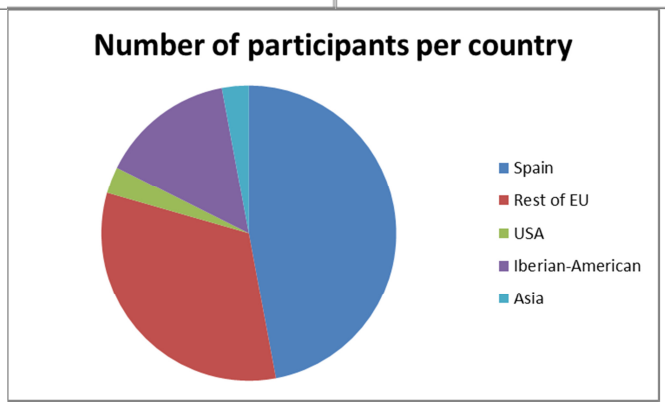
Statistics say that more than 50% of our students will end working outside Academia, so we should help them to contact industry.

- The meeting in figures

35 Delegates from different backgrounds and countries. A multisectorial meeting which joined producers, delegates from the chemical industry, agro-food industry, pharmaceutical and biomedical industries and aquaculture.







- Our results
  In the short term:
  - 6 new companies got in contact with our Societies
  - 52 one-to-one meetings

In the long term:

- New business opportunities for Companies
- New funding opportunities for researchers and Companies
- More Job opportunities for our members

Inmaculada Aranaz Corral

Young Researchers Symposium

After the conclusion of the main conference, the Young Researchers Symposium (YRS) was held that aimed to give the stage to eight students and young post-docs and allow them to present their results in ten-minute oral presentations with a short discussion afterwards. The scientific committee for the YRS consisted of Antonio Franconetti (Spain), Inmaculada Aranaz (Spain), Martin G. Peter (Germany) and Marguerite Rinaudo (France) but several other more experienced researchers also chose to stay to listen and discuss with the young scientists. Presentations of research conducted as part of the Nano3Bio project included talks about Chitosan/cyclodextrin/TPP nanoparticles as novel quorum sensing inhibitors by Nguyen Thanh Hao (Germany), who already won the second prize for the poster presentation in the main conference. Furthermore, Tamara Mengoni (Germany) presented research of Chitosan carriers for Substance P delivery for Wound healing treatment and Stefan Hoffmann (Germany) showed recent results of fluorescent and FRET labelling strategies for in vitro and in vivo labelling of chitosan nanocapsules. Overall, the presentations and discussion were lively and rivalled those of the main conference. The YRS allowed young researchers to get feedback to their work from the experienced delegates as well as discuss with other young researchers about the day-to-day activities of laboratory work.

Chitosan nanoparticles embedded hydrogels as a novel nanomedicine based-strategy for the treatment of vaginal infections.
Diego R. Perinelli, University of Camerino, Italy

Chitosan/cyclodextrin/TPP nanoparticles as the novel quorum sensing inhibitors.
Nguyen Thanh Hao, Universität Münster, Germany

Fluorescent and FRET labelling strategies for in vitro and in vivo labelling of chitosan nanocapsules
Stefan Hoffmann, Universität Münster, Germany

Wound healing treatment: New chitosan carrier for Substance P delivery
Tamara Mengoni, Universität Münster, Germany

Mitigating drought stress in sugarcane through the foliar application of normal and gamma irradiated chitosan: Physiological and biochemical studies
Shriram J. Mirajkar, Vasantdada Sugar Institute, Manjari (Bk.), Pune, India

Reducing-end functionalization of chitooligosaccharides produced by nitrous acid depolymerization of chitosan
Amani Moussa, Université Claude Bernard Lyon 1, Villeurbanne, France

Chitosan physical hydrogels mineralized with Calcium Phosphate particles
Silvia Ramirez, Université Claude Bernard Lyon 1, Villeurbanne, France

Nanostructured chitin membrane of high strength prepared with chitosan in a colloidal suspension
Ngesa Ezekiel Mushi, Royal Institute of Technology, Stockholm, Sweden

Stefan Hoffmann

To all participating Young Researchers: We wish to collect your opinion about the YRS. Please take a few minutes and fill in the questionnaire at https://es.surveymonkey.com/r/WSK6BGX. This will be for the benefit of future events like this one. Thank you very much !

Inmaculada Aranaz Corral

Poster Awards

Sponsored by *Molecules* (MDPI)

1st Prize: Poster 39
Silvia Ramirez (France)

Chitosan physical hydrogels mineralized with Calcium Phosphate particles

S. Ramirez, L. David, T. Delair, A. Montembault, S. Tadier, L. Gremillard

2nd, equal number of votes for three posters, shared between:
a) Nguyen Thanh Hao (Germany, Poster 52)

Chitosan/cyclodextrin/TPP nanoparticles as the novel quorum sensing inhibitors

Nguyen Thanh Hao, Francisco M. Goycoolea

b) Marta Suárez-Fernández (Spain, Poster 17)

Monitoring effect of chitosan and biocontrol fungus *Pochonia chlamydosporia* on tomato rhizodeposition using Metabolomics

Marta Suárez-Fernández, Frutos Marhuenda Egea, Luis V. Lopez-Llorca

c) Irais Hernández Valdivia (Spain, Poster 10)

Activity of the nematophagous fungus Pochonia chlamydosporia encapsulated in chitosan on tomato plants

Irais Hernández Valdivia, Ana Lozano Soria, Niuris Acosta Contreras, Ángeles Heras Caballero, Luis V. Lopez-Llorca

Prix Braconnot

Awarded by EUCHIS to Dr. Stefan Cord-Landwehr, University of Münster, Germany

Jury: Angeles Heras (Spain), Thierry Delair (France), Francisco Goycoolea (U.K.), Katja Richter (Germany)

http://euchis.org/braconnot-prize/previous-winners-of-the-braconnot-prize/stefancord-landwehr-abstract/

EUCHIS Travel Awards, 2017

Mrs. Laura Fagioli
University of Urbino, Italy

After my master degree in Chemistry and Pharmaceutical Technology in 2014 I decided to apply for a PhD position in Pharmaceutical Technology under the supervision of Dr. Luca Casettari. I think that one of the most important things to consider when you are doing science is sharing your research with other people working on your field, having the possibility to discuss your results and eventually challenges with the aim of solving them. In this regard XIII EUCHIS/VIII SIAQ 2017 was a great opportunity for me. I am working on chitosan field as part of my PhD program, focusing my research on its antimicrobial properties and biomedical applicability.

The Conference provided a really satisfactory overview on chitosan research status bringing together scientists from all around the world. An International community met in Seville: people from both academia and industry working on the same topic but with different backgrounds from chemistry and pharmacy to biology and agriculture were together to discuss the present and the future of chitosan. I could listen to really exciting lectures and I was really impressed about the advances in chitosan science.

Different topics were discussed during the different sessions and participants had the possibility to choose based on their interest. Moreover two different poster sessions were held to allow researches to present their works and discuss with other young scientists. The Congress took place in the wonderful Seville, at the Faculty of Chemistry. The location was really nice and equipped with all the facilities needed. In the evening we had time to visit the city and enjoy the Spanish traditional cuisine. Seville is a really nice city with many attractive historical monuments and the organization even reserved to all the participants a guided visit to the amazing Alcázar Palace. This experience really motivated and encouraged me to pursue in my research on chitosan and offered me a lot of great inputs and the possibility to enlarge my knowledge.

I would like to take this opportunity to thank EUCHIS for being awarded with a travel grant that allowed me to attend the Conference.

Dr. Shriram J. Mirajkar [M.Sc., Ph.D. Agri. Biotech.]
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I take this opportunity to express my sincere gratitude towards the European Chitin Society (EuChis) for providing me with the 'Travel Grant Award' for attending the "XIII European Chitin Conference and VIII Iberoamerican Chitin Symposium" held between 31st May to 3rd June 2017 at Seville, Spain.

To begin with, I would like to briefly describe how I got to the world of chitosan. After completion of graduate (from IGKV, Raipur, India) and post graduate (from UAS, Bangalore, India) education with specialization in 'Agricultural Biotechnology', I obtained my Ph.D. (Agricultural Biotechnology) from Dr. Panjabrao Deshmukh Krishi Vidyapeeth (Dr. PDKV), Akola, India. Soon after Ph.D., I sought an opportunity to join a research project that aimed to develop chitosan based 'Biostimulator' for sugarcane and potato cultivation. Vasantdada Sugar Institute (VSI), Pune, India was the host institute and has received financial support from the Board of Research in Nuclear Science (BRNS), Government of India and technical assistance from Bhabha Atomic Research Centre (BARC), Mumbai, India. To the best of my knowledge this is the only research project and research group in India, working on use of radiation processed chitosan to enhance yield and productivity of crop plants. In a snapshot, the project highlighted and explored potential of gamma irradiated-low molecular weight (LMW) chitosan for sugarcane, potato and few vegetable crops cultivated as a intercrop along with sugarcane. The institute is now looking forward for commercialization of the product very soon for the benefit of farmers in the country.

My sole motive behind attending the EuChis & SIAQ symposium-2017 was to get deeper insights of chitin and chitosan research in a global perspective. The symposium, in my view, has succeeded to provide perfect ambience that brought the international community of researchers, industrials and learner-scholars on a single platform to discuss and share diverse aspects of chitin and chitosan, from basic science to technological and applied aspects. Various scientific sessions, posters and coffee-break discussions provide an ample opportunity to interact with experts and senior scientists working in the field. Many scientific presentations were highly relevant to my research interests and that provided me with a new perspective to think beyond. I also perceived this event as an occasion to get familiarize with technological advancements made to understand breadth and width of chitosan science. As far as I could notice, the contribution of private sector companies and industries is remarkable in developing of unique and novel chitin/chitosan based applications and products. This event also provided me a unique platform to share my ideas with the experts, learn and get motivated from their experiences.

This occasion provided many things for the first time ever in my life. As this was the first time ever I travelled by a flight, the first international event attended abroad, the first oral presentation in an international event and my first visit to Europe, rather Spain (Seville). I enjoyed uniqueness and diversity of cuisine, lifestyle and had a comfortable stay at the University Residence. In a whole, the event was well planned, organized and conceived. At

first sight it looked very simple and easy, but I can sense the kind of efforts taken by each and every person involved in organizing the things, therefore truly appreciate their efforts.

Besides all above, I also like to mention about Seville which is a truly a historic city. The Park of Maria Luisa which is an ideal piece of architecture and historic culture that is well restored and preserved to inculcate and inspire the present and future generations. Another thing that truly enforced me to feel mesmerized and amazed was the Real Alcazar- The Royal Palaces. This world heritage site is a not only the proof of the richness of ancient culture, power, wisdom, but also scientific developments empowered and enriched over the years. Furthermore, I also enjoyed the truly amazing and spectacular performance by the '*Flamenco'* dance artists during the congress dinner organized at the 'Museo de Carruajes'. All these experiences together will remain in my deep memories for life long.

I would also like to convey sincere thanks and appreciations from all co-authors and team members of my research group in India. I also take this opportunity to thank the EuChis & SIAQ organizers for granting full waiver on the conference registration fees and an opportunity to participate in the Young Researcher Symposium. Finally, I would like to thank EuChis for providing the travel grant award which made the whole trip a worth success.

Thanking you.

Dr. Shriram Mirajkar

Minutes of the
EUCHIS Board Meeting, June 1, 2017

A meeting of the Board of the European Chitin Society was held on June 1, 2017, in the University of Seville, Faculty of Chemistry, under the Chairmanship of the President, Prof. Angeles Heras.

Ten members of the Board attended the meeting: A. Heras (President), S. Bratskaya (Secretary), M. Peter (Assistant Secretary), F. Goycoolea (Treasurer), K. Richter (Assistant Treasurer), and members F. Cabrera-Escribano, C. Caramella, T. Delair, B. Moerschbacher, J. Skorik.

Agenda

Report of the President

1. Report of the Secretary
2. Report of the Treasurer
3. Modification of the Statutes
4. Member Statistics
5. Nomination of new Board members
6. Forthcoming Conferences
7. Advances in Chitin Science
8. Prix Braconnot
9. VariaThe President opened the meeting at 13:30. Notice of the Board meeting and agenda was distributed to Board members in time. The number of attendants was sufficient to form a quorum. The minutes would be kept by S. Bratskaya.

Items 1 – 5 and 9 were briefly discussed and approved for presentation in the General Assembly, see the minutes.

6. Nomination of new Board members

The following Board members stepped down: C. Caramella, H. Eroglu, M. Jaworska, M. Pintado, B. Sarmento, J. Simunek. Nominations of new members: Aranaz Corral, L. David, M. Fenice, O. Goñi, M. Struszczyk, G. Tegl. The persons not present in the Board meeting had given their consent to be nominated either verbally or by e-mail. No further nominations were proposed. The Board unanimously approved the nominations to be presented in the General Assembly.

7. Forthcoming Conferences

A. Heras reported an application by the Tyndall Institute in Cork, Ireland, for organization of EUCHIS'2019. The Board agreed to invite M. Bardosova to present the proposal in the General Assembly.

8. Advances in Chitin Science

The Advances do not appear anymore on a regular schedule. Vol. 15 (EUCHIS'2013) still did not appear, Vol. 16 (EUCHIS'2015) is in preparation. Papers are more and more published in peer reviewed Special Issues of Journals.

10. Varia

No other items were raised. The President closes the meeting at 14:45.

Svetlana Bratskaya

Minutes of the

EUCHIS General Assembly, June 2, 2017

A General Assembly of the European Chitin Society was held on June 2, 2017, in the University of Seville, Department of Chemistry, under the Chairwomanship of the President, Prof. Angeles Heras.

Twenty one members of EUCHIS, including five members of the Committee of the Board and five members of the Board, attended the meeting.

The President opened the meeting at 17:30. She informed the General Assembly about the passing away of Professor Kjell M. Vårum and expressed, also in the name of The European Chitin Society, her sympathy and sorrow to his family.

Announcement of the General Assembly was posted in time in the homepage and the agenda in Newsletter #39. The minutes shall be kept by M. Peter.

Agenda

1. Approval of the Agenda
2. Approval of the Minutes of Sept. 01, 2015
3. Report of the President
4. Report of the Secretary
5. Financial report 2015 and 2016
6. Discharge of the Managing Board
7. Member Statistics
8. Election of new Board members
9. Modification of the Statutes
10. Forthcoming Conferences
11. Prix Braconnot
12. Varia

1. Approval of the Agenda

It is agreed that voting would be done by showing hands, unless it would be requested otherwise by any of the attendants. The Agenda is approved unanimously.

2. Approval of the Minutes of Sept. 01, 2015

Minutes of the General Assembly of September 2015 are published in Newsletter #36, December 2015. There are no objections and the minutes are approved unanimously.

3. Report of the President

The President reports briefly on the preparations and progress of the 13th EUCHIS Conference in Seville and on the two satellite meetings, i.e. industrial in Madrid and young researchers symposium in Seville.

4. Report of the Secretary

Newsletters appeared on a regular schedule in 2015 (#35 and 36), 2016 (#37), and 2017 (#38 and 39). They were uploaded into the website of EUCHIS. A notice about their availability was sent by e-mail to all members. Members are invited to contribute more actively to the Newsletter, especially with focus on completed PhD theses and ongoing non-confidential research items.

5. Financial report 2015 and 2016

The financial reports 2015 and 2016 of EUCHIS are given by F. Goycoolea, see Appendix 1. Auditors K. Richter and M. Peter testify correctness of the account records. The reports are approved by the General Assembly (pro 17 – abstention 3 – contra 0).

6. Discharge of the Managing Board

It is proposed to discharge the Managing Board of Directors. There was no further discussion. The members unanimously vote for discharge of the Managing Board (Pro 16 – abstention 5 – contra 0). On behalf of all the members of the Managing Board, the Chairwoman thanked the attendees for this decision.

7. Member Statistics

The number of members presently stands at 84, see Appendix 2.

8. Election of new Board members

The following Board members stepped down:
C. Caramella, H. Eroglu, M. Jaworska, M. Pintado, B. Sarmento, J. Simunek Nominations of new members:
I. Aranaz Corral, L. David, M. Fenice, O. Goñi, M. Struszczyk, G. Tegl
Continue in the Board would
S. Bratskaya, F. Cabrera-Escribano, T. Delair, V. Eijsink, A. Heras, F. Goycoolea, B. Moerschbacher, M. Peter, K. Richter, Y. Skorik
All proposed Board Members had agreed to their nomination. Those not present in the meeting had given their consent either verbally or by e-mail. As no further nominations were raised, voting was effected for all candidates by show of hands: pro 20 – abstention 1 – contra 0, for each candidate.

9. Modification of the Statutes

The Statutes had been modified in items 12, 14, 15, and 21 in 2001, as published in Newsletter #14, June 2001 (a copy is available from M. Peter on request). Concerning item 2, the domicile of EUCHIS has changed in 2009. Formerly: "Claude Bernard University, Laboratoire d´Etudes des Matériaux Plastiques et des Biomatériaux, 43 Boulevard du 11 Novembre 1918, Villeurbanne, Cedex (France)"; new: "Université Claude Bernard Lyon 1, Laboratoire d'Ingénierie des Matériaux Polymères, 43 Boulevard du 11 Novembre 1918, F-69622 Villeurbanne, Cedex (France)". The modifications of the statutes are in Appendix 2. M. Peter proposes that he will do the necessary paperwork to update the registration of EUCHIS at Prefecture du Rhône, Lyon. The General Assembly accepts the modification of the statutes (pro 21 – abstention 0 – contra 0) and further actions to be done by M. Peter (pro 20 – abstention 1 – contra 0).

10. Forthcoming Conferences

M. Bardosova presents her proposal for EUCHIS'2019 to be organized in Cork, Ireland. The proposal is approved unanimously by the General Assembly.

11. Prix Braconnot

Just one application for the Braconnot Prize had been submitted to the President. An abstract of the PhD thesis of the candidate, Stefan Cord-Landwehr, University of Muenster, Germany, was published in Newsletter #39. The Jury, formed by A. Heras, T. Delair, F. Goycoolea, and K. Richter, judged the candidate's work as significant contribution to Chitin Science, worth for awarding the Prize. The prize is valued at 500,00 Euros.

12. Varia

No other items were raised.

The Chairwoman closed the General Assembly at 19:10. She thanked the attendants of General Assembly for their participation and the former Members of the Board for their engagement and work done for the benefit of EUCHIS.

Bruno M. Moerschbacher, President
Martin G. Peter, Secretary

EUCHIS Board Meeting, June 2, 2017

A meeting of the new Board took place immediately following the General assembly (19:15 – 19:30).
Attendants: I. Aranaz Corral, S. Bratskaya, F. Cabrera-Escribano, L. David, T. Delair, O. Goñi, F. Goycoolea, A. Heras, B. Moerschbacher, M. Peter, K. Richter, Y. Skorik, G. Tegl.
The only topic was election of the Committee of the Board. The Board in charge of the administration of EUCHIS for the next two years, beginning in June 2017, is composed of the following members:

Committee of the Board

President:	Bruno Moerschbacher (DE)
Vice-President:	Inmaculada Aranaz Corral (ES)
Vice-President:	Svetlana Brataskaya (RU)
Secretary:	Martin G. Peter (DE)
Assist. Secretary:	Thierry Delair (FR)
Treasurer:	Katja Richter (DE)
Assist. Treasurer:	Francisca Cabrera-Escribano (ES)
Members:	Laurent David (FR)
	Vincent Eijsink (NO)
	Massimiliano Fenice (IT)
	Oscar Goñi (IR)
	Francisco Goycoolea (UK)
	Angeles Heras (ES)
	Yuri Skorik (RU)
	Marcin Struszczyk (PL)
	Gregor Tegl (AT)

Contact details are posted in www.EUCHIS.org.

Bruno M. Moerschbacher, President
Martin G. Peter, Secretary

Financial Report 2015

Balance per 31.12.2014		**8,450.94 €**	
Positiva			
	Member subscriptions 2015	2,267.61 €	
Balance Positiva			**10,718.55 €**
Expenses			
	Internet charges	-1,586.05 €	
	Office expenses	-300.00 €	
	EUCHIS 2015 Congress Support	-2,916.50 €	
	Bank charges	-68.38	
SUM			-4,870.93
Balance per 31.12.2015			**5,847.62 €**

Francisco M. Goycoolea, Treasurer
Katja Richter, Auditor
Martin G. Peter, Auditor

Financial Report 2016

Balance per 31.12.2015		**5,847.62 €**	
Positiva			
	Member subscriptions 2016	1,427.00 €	
Balance Positiva			**7,274.62 €**
Expenses			
	Internet charges	-298.86 €	
	Office expenses	-55.22 €	
	Bank charges	-23.13 €	
SUM			-377.21
Balance per 31.12.2016			**6,897.41**

Francisco M. Goycoolea, Treasurer
Katja Richter, Auditor
Martin G. Peter, Auditor

Members Statistics 2017

(as of May 22, 2017)

	Active	Associate	Collective	Donor	Student	Total
Austria	1					**1**
Belgium			1	1		**2**
Brazil		1				**1**
Czech Republic	1					**1**
France	1		3	2	4	**10**
Germany	11			2	3	**16**
India		1			3	**4**
Ireland	1					**1**
Italy	4				1	**5**
Malaysia		1				**1**
Mexico					3	**3**
Norway	4				2	**6**
Oman					1	**1**
Poland	3				1	**4**
Portugal	1					**1**
Russia	7				1	**8**
South Africa		1				**1**
Spain	6		1		1	**8**
Sweden	2					**2**
Switzerland			1		2	**3**
The Netherlands	1					**1**
Turkey	1			1		**2**
U.K.	1			1		**2**
Total 2017	**45**	**4**	**6**	**7**	**22**	**84**
Total 2016	**38**	**3**	**3**	**7**	**16**	**67**
+/-	**+7**	**+1**	**+3**	**+/-0**	**+6**	**+17**

Subscription records:

Donors	**7**
Paid 2017	**33**
Last paid 2016	**10**
Last paid 2015	**31**
Last paid 2014	**3**

6th Indian Chitin and Chitosan Society Symposium (ICCSS)

The 6th ICCSS was convened jointly with the International Conference on Biotechnological Aspects of Chitosan and Chitooligosaccharides (ICBACC) in the School of Life Sciences, University of Hyderabad, Telangana State, India, Sept. 21 – 22, 2017. It was chaired by Mr. Vikram Sudhakar, Marshall Marine Products, Erode, Tamil Nadu, under the Patronage of Prof. Apa Rao Podile, Vice Chancellor of the University, and the Presidency of Prof. P. Reddanna, Dean of the School of Life Sciences.

The scientific programme encompassed two outstanding plenary lectures: B. Moerschbacher presented a detailed study with novel insights on interactions of chitosan with LysM and CERK proteins, using precisely defined chitosan oligosaccharides; R. Jayakumar reported very promising results on injectable chitin/chitosan hydrogels for biomedical applications. In addition, four scientists presented lectures sponsored by Marshall Marine for a researcher (S. Meenaskshi on removal of toxic ions with chitin/chitosan derivatives) and two student awards (S. Sd. Elanchezhiyan on removal of oil from oil in water emulsions; Maya S. on nanomedicines for cancer treatment). The M.V Desphande Young Scientist award was granted to I. Bhatnagar for research on nano-thera-nostics. Seven invited talks, nine oral presentations, and 27 posters completed the programme.

Delicious, spicy lunches were served within the splendid complex of the School of Life Sciences, and a superb conference dinner was offered in the beautiful garden of the Ellaa Hotel.

In summary, it was a lively, rewarding meeting, giving a notable overview on the activities of chitin/chitosan research and applications in India, and also unforgettable exchange of ideas and social interactions with our Indian colleagues. Thank you, organizers, presenters, and ghosts-behind-the-scene!

Martin G. Peter

Jobs wanted

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E:suneetak7@gmail.com; srisuneeta25@gmail.com

PERSONAL SUMMARY

To run a responsible position in an organization where I would be able to utilize my qualifications and skills through growth-oriented activities and to work in a challenging environment.

AREAS OF EXPERTISE Biopolymers • Membrane • Waste water

CAREER HISTORY

Assistant Professor, Chemical Engg, Mualana Azad National Institute of Technology, Bhopal: 13-07-2017- Till date

Duties

Develop and execute inventive instructional methods.
Guide, direct and mentor research scholars in their research projects.
Review, assess and evaluate the activities and progress of students.
Publish their research or findings in academic books or journals.
Grade papers and tests: prepare exercise, lessons and lab experiments for the students.

Lecturer-2015 – 2016, Haramaya University, Chemical technology department, Haramaya Ethiopia.

Assistant Professor-2009 – 2011, Chemical Engg, Mualana Azad National Institute of Technology, Bhopal.

KEY SKILLS: Having a responsible attitude, Creativity, hard working, Sincerity, Devotion to duty

ACADEMIC: PhD, Chemical Engg, National Institute of Technology, Rourkela, India –2017
M.Tech, Chemical Engg, R.G.P.V.Bhopal -2009
B.Tech, Chemical Engg, R.G.P.V.Bhopal – 2006

PUBLICATIONs

1. **Suneeta Kumari and Abanti Sahoo,** "Treatment of steel plant Effluents by Using Polyethersulfone/Chitosan Membrane Derived from Fishery Waste" International Journal of Environmental and Ecological Engineering Vol:4, No:3, 2017 .
2. **Suneeta Kumari,** P. Rath, A. Sri Hari Kumar, T. N. Tiwari, "Chitosan from shrimp shell (Crangon crangon) and fish scales (Labeorohita): Extraction and characterization" African Journal Biotechnology, 15(24), 1258 - 1268 , 2016.
3. **Suneeta Kumari,** P. Rath, A. Sri Hari Kumar, T. N. Tiwari, "Removal of hexavalent chromium using chitosan prepared from shrimp shells" African Journal Biotechnology, 15(3), 50-54, (2016).
4. **Suneeta Kumari,** P. Rath, A. Sri Hari Kumar, T. N. Tiwari, "Extraction and Characterization of Chitin and Chitosan from Fishery waste by Chemical method" Environmental Technology & Innovation, 3, 77-85 (2015)
5. **Suneeta Kumari**, P.Rath, A. Sri Hari Kumar, "Solid Waste Management of Fishery and Shrimp" Manuscript accepted for publication, Material Sciences and Engineering.
6. **Suneeta Kumari**, P.Rath" Extraction and characterization of chitin and chitosan from (Labeo rohit) fish scales, Procedia Material Science, 6, 482- 489 (2014)
7. **Suneeta Kumari**, Ashok Kumar Sharma , Sarita Sharma, "Energy content of municipal solid waste in ujjain city and its potential utilization, Pollution Research, 29(2): 181-190 (2010)
8. **Suneeta Kumari** , Ashok Kumar Sharma, Sarita Sharma, "Energy recovery of municipal solid waste in Ujjain City, Asian journal of chemical and environmental research , Vol.2(3-4) (2009)

REFERENCE: Dr. Bharat Kumar Modhera(H.O.D),Assistant Professor, chemical Engg department