

IBBS World



Newsletter of the International Biodeterioration & Biodegradation Society
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15th International Symposium on Biodeterioration and Biodegradation University of Natural Resources and Life Sciences Vienna, Austria 19th - 24th September 2011 Come to the IBBS AGM!



Education Resources

As usual, for the past 2 years, the newsletter is now accompanied by the launch of 5 education resources. These A4 single sheets are intended to raise awareness of the research activities of our members, and of the importance of our research to a range of audiences. Each sheet summarises a key biodeterioration, biodegradation or bioremediation topic. Each sheet has been produced by an expert in that particular field, and the format is usually similar, describing the substrate, the causative microorganisms, prevention and control, and impact. We also try to include a 'fascinating fact' and a couple of key references. This new batch of 'Notes on...' encompasses leather, stainless steel, marine biofouling, decontamination in space, and the economics of biodeterioration. Previous sheets, on stone, textiles, fuels, film, biofilms, bioremediation, artworks, paint, cosmetics, preservation, corrosion, terminology, wood, and paper can be downloaded from our website ibbsonline.org. Feedback is always welcome, as well as suggestions (and volunteers) for future sheets. We are proud of this resource that we are building. We have had some excellent comments on them from external audiences - which can only be good news for IBBS and our interests.



Editor's Notes

Well, here we are, counting down to IBBS-15 in Vienna. This newsletter provides some information on the programme, which looks really exciting. Don't forget to come to the AGM to meet other IBBS members - and pick up a set of our wonderful education fliers at our stand! I will also be looking out for authors for the next batch in the series. The atmosphere of IBBS triennial meetings is always warm and friendly, and I know that Katja and Guadelupe are working hard to keep that tradition going. They have also taken special pains to ensure that young scientists play a key role in proceedings. Noting other news, the Essay prize that was launched earlier this year received few entries, and we have decided to re-launch the competition at IBBS-15 with slightly less stringent rules. It was lovely to receive an unsolicited article from Chris Gaylarde about some of her research. Please remember that any contributions to the newsletter are most welcome - otherwise I have to find all the stories myself! As I noted in my last newsletter, my time on Council elapses this year. I really hope to find a volunteer to take over the duties of newsletter editor - again, please get in touch, or have a chat at IBBS-15 if you are interested. Back to IBBS-15, we are expecting well over 200 delegates, with 140 posters accepted, and over 80 oral presentations. There will be a full day dedicated to Biodeterioration of Cultural Heritage (18 short oral presentations, Wednesday, 21st) and in parallel a big session on "Biodegradation of hydrocarbons and persistent pollutants" (18 short oral presentations, Wednesday 21st September). The full program is now online on the homepage <http://ibbs-15.boku.ac.at>. One day registrations are also available. See you there! Best wishes, Jo j.verran@mmu.ac.uk

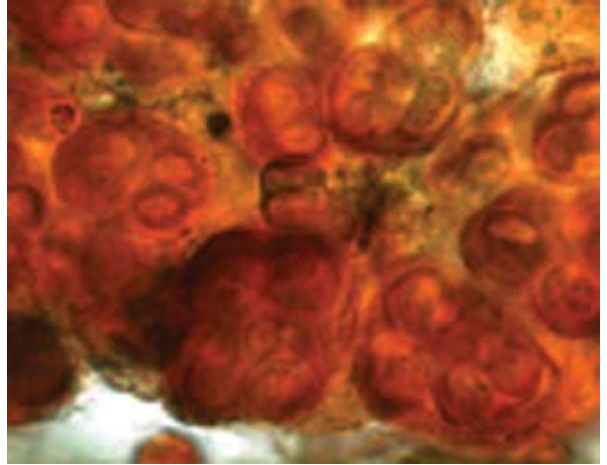
Paint films in the sub-tropics

Chris Gaylarde has been collaborating with a group at the University of São Paulo (USP) Polytechnic School in their research efforts on biodeterioration of dry paint films. The Civil Engineering group, headed by Prof. Vanderley John and including Drs. Marcia Shirakawa and Kai Loh, needed expertise on the cyanobacterial component of the biofilms formed on painted surfaces. Chris, working on the Brazilian painted panels both in Campeche, Mexico, during her recent stay there, and in USP, detected cyanobacteria and some algae on the panels that had been exposed in various locations in Brazil. Some of the results have been published (see below) and the latest effort is directed at biofilms on fibre cement panels painted with white paints of varying pigment content to check the effect of the pigment: volume content (PVC) on biodeterioration and to assess the efficiency of high-pressure water jet cleaning.

The panels have been exposed at test sites in São Paulo state, as well as in the south and north of Brazil, for up to 7 years and one of the main results is not a surprise; hot and humid north Brazil is a huge challenge to paint manufacturers! Biofilm formation was most intense here in the city of Belém, and cyanobacteria were particularly prevalent. In the temperate climate of Rio Grande, the southernmost city in Brazil, little microbial colonization had occurred after 3 years. "We had to search hard to find fungi and phototrophs on these surfaces", says Chris.

Since November last year, Chris has been analyzing exposed panels covered with paints of different finishes, silk, semi-gloss, matt and elastomeric matt. The non-elastomeric matt paint has become the most discoloured and degraded after its 7 years of exposure. A very notable pink/brown discoloration occurred especially on the elastomeric matt paint exposed at a wooded test site located on the coast of São Paulo state. The colour suggested that this might be a *Trentepohlia* biofilm, similar to several seen in other parts of Brazil and in Mexico. However, microscopic analysis showed that it was composed of red-pigmented spherical cyanobacteria.

Chris says, "After doing the microscopy, I went back and checked the biofilm with the moist finger test. Unlike *Trentepohlia* biofilms, it did not change colour to bright orange when rubbed". Keep a look out in the journal (IBB) for a paper on some of this work.



Refs

Shirakawa, M.A., Tavares, R.G., Gaylarde, C.C., Taqueda, M.E.S., Loh, K., John, V.M., 2010. Climate as the most important factor determining anti-fungal biocide performance in paint films. *Science of the Total Environment* 408, 5878-5886

Shirakawa, M.A., Loh, L., John, M., Silva, M.E.S., Gaylarde, C.C., 2011. Biodeterioration of painted mortar surfaces in tropical coastal situations: comparison of four paint formulations. *International Biodeterioration and Biodegradation*. In press

Photo: red-pigmented cyanobacteria of the species *Gloeocapsa*, similar to those found on the painted panels.

Chris Gaylarde

FEMS Congress. Geneva 2011

The 4th FEMS Congress was held at Geneva in June this year. Over 2000 delegates from 87 countries attended, making it the largest Congress so far. The meeting hosted 10 'special events' and 50 symposia/workshops, in addition to almost 2000 posters. I was involved with two of the special events, one for postgraduates and early career researchers, on 'getting published', and the other on 'public engagement'. Both of the events were hosted by the Society for General Microbiology. It was fantastic to get over 400 in the audience for the first session, and well over 200 for the second. To my eyes, every event was really well attended. The opening ceremony/reception gave everyone a chance to look at the posters and exhibitor stands whilst sampling food from around the world - especially Switzerland. The 'raclette' stall was very popular of course! I represent IBBS on FEMS Council: FEMS provides excellent support to its member societies, particularly as grants. Once again, we are extremely grateful for their awards for IBBS-15. I have also been nominated for the post of Secretary-General of FEMS - the decision will be made at the next Council in September, which is the weekend before IBBS-15, so I will know by then whether I have been successful or not!

Last, but not least, Geneva itself is a lovely city, and the weather was warm and welcoming. A great meeting all round!

Jo Verran



Programme for IBBS-15, Vienna

Information about IBBS-15 can be found on the website, but some of the highlights are summarised below. From the opening reception, on Monday September 19th (my birthday!) to the post-conference visit to the UNESCO World Cultural Heritage region 'Wachau', delegates will be looked after intellectually and socially.

The different sessions comprise invited keynote speakers who are experts in their field, with related offered papers. Poster sessions are always busy as well, providing an excellent opportunity for delegates to mingle and discuss their work.



The first session on Tuesday morning sets the scene with 'biofilms and biofouling'. At IBBS-14, one of the most interesting sessions, because of the diverse topics addressed, was on the biodeterioration of 'miscellaneous materials', and this session has been moved from last to first this time round! We then focus on specific substrates, particularly wood and paper. Wednesday hosts parallel sessions; one on biodeterioration of cultural heritage and building materials (my special favourite), and the other on biodegradation of persistent pollutants, before we return to one session on Thursday, focusing on bioremediation, with the last sessions on Friday looking at prevention and control. The conference dinner takes place on Wednesday evening. A new adventure for IBBS, and an excellent idea of the organisers, Katja

Sterflinger and Guadalupe Pinar, is the mentoring sessions on Thursday evening, where young researchers can discuss their work and ambitions with experienced scientist 'mentors'. FEMS funding has helped support the travel of several young scientists, and Katja and Guadalupe have put special effort into making sure that young voices are heard at the meeting. All this, plus Vienna - and the IBBS AGM!



<http://www.biotec.boku.ac.at/14837.html>

Small Meetings Grant Report

Microbes in Wastewater Treatment, Bioremediation and Energy Production, Goa (January 24-27, 2011)

The IWA specialist conference "Microbes in wastewater & Waste Treatment, Bioremediation and Energy production (MWT 2011) was held in Goa, India at the Birla Institute of Technology and Science (BITS) - Pilani, K K Birla Goa campus, Goa India in association with Institut National de la Recherche Agronomique (INRA), France from January 24th to 27th 2011 with inauguration ceremony on 23rd January 2011 with generous financial support from the German Technical Cooperation, Department of Science Technology and Environment, Goa, India and the International Biodeterioration and Biodegradation Society (IBBS).

The meeting was a great success. The chief guest for the inauguration ceremony was Dr. Nicolas Poussielle, Scientific Attache of the French Embassy, Mumbai, India. Over 160 abstracts were received. These papers were reviewed by the 25 members of the scientific committee. 125 delegates attended from 18 different countries, with 65% of the delegates from India. It was excellent to see such significant participation of Indian researchers - this had been one of the aims of the meeting, and one of the reasons for having the conference in India. Student participation was high with 49 students registered, again 65 % of them coming from India.

70 oral papers and 4 key-note speeches were presented during the 3 days of the conferences in two parallel sessions. During this conference, emphasis was given on microbiology, but processes were also discussed. Presentations covered a wide range of possible applications including ecosystem monitoring, microalgae, anaerobic digestion, techniques, nutrient removal, H₂ and electron donors, pathogen removal and airborne microbes, pathogen removal, biofilm, wastewater treatment, bioremediation, microbial activity, energy production, enzyme production, low cost technologies, anaerobic and aerobic processes, 80 posters were exposed and some companies had advertised during the conference about their activities and products.

Many students from BITS Pilani KK Birla Goa campus were involved in the organisation of the conference. During the conference, shuttles were organised between the main hotels and the Institute where the conference took place. Two gala dinners were organised on the inauguration day and on 25th January. The first one was offered to the foreign delegates by the management of the BITS Pilani KK Birla Goa campus. The second one was an outdoor banquet on a boat cruise on Mandovi river along with a cultural show.

On the last day (January 27th), a post conference tour was organised to Dudhsagar waterfalls near to Goa. The trip to the village, surrounded by scenic mountains, and wonderful waterfalls was a pleasant treat for all delegates, and an excellent finish to a very successful meeting. Thanks again to IBBS for the Small Meetings Grant Award.

Srikanth Mutnuri



New Small Meetings Grant Award

A forthcoming meeting is a recipient of the IBBS Small Meetings Grant - as was the meeting in Goa. IBBS provides 250GBP or Euro equivalent to support conferences/meetings overseas. 8th International Conference on Contaminants in Freezing Ground April 22-26, 2012; Obergurgl/Tyrol, Austria, located at an altitude of ca. 2000 m above sea-level, from 22th to 26th April 2012.



This meeting is the 8th conference in a series. It is the objective of the conference to bring together scientists, students, engineers, environmental managers and companies who have a scientific or practical interest in contaminants in cold climates. The conference will continue the tradition of having a wide range of presentations in a single platform (no parallel sessions). It will be an exciting opportunity to enjoy the scientific content of the conference as well as the natural beauty of the Tyrolean Alps.

The broad conference topics for oral and poster sessions include

- Arctic, Antarctic, sub-polar, and alpine sites
- Contaminants from oil and gas operations, mining, military areas, wood treatment, landfills, and sewage in cold climates
- Fundamental (physical, chemical, biological) properties of contaminated cold climate soils and other ecosystems
- Ecology and biodiversity of contaminated cold terrestrial and aquatic ecosystems
- Cold-adapted microorganisms: biodegradation and biotransformation of contaminants at low temperatures
- Bioremediation technologies for cold sites
- Methods: assessment and monitoring of bioremediation; long-term monitoring, remote sensing, risk assessment
- Management of contaminated sites in European, American, Asian, Australian countries: strategies, technologies, remediation procedures
- Permafrost and climate change: impact on decontamination

www.CFG8.at

Registration is now open and the Abstract deadline December 1, 2011.