ISAP 2008,
By Stefan Kraan, Chair Local Organizing Committee

The 11th tri-annual International Conference on Applied Phycology was held from 22nd of June to 27th of June 2008 at the National University of Ireland, Galway, Ireland, and entitled Applied Phycology in the 21st Century; novel opportunities in a changing world'. The conference was attended by 430 registered participants from 43 countries all over the world. The participation of scientists from less industrialized countries was encouraged through financial support from ISAP, the Local Organising Committee and Industry. There were 165 oral and 140 poster contributions, providing an exhaustive coverage of the present status of applied phycology.
The conference started with a key note lecture "Algae and Biofuels, Quo Vadis?" by Prof. Michael Borowitzka addressing one of the hot issues at the moment, i.e. use of algae for biofuel production. The subsequent 26 sessions (mini symposia and contributed papers) dealt with: biofuels, CO2 sequestering ,integrated multitrophic aquaculture, photosynthetic efficiency, caretenoid production, algae and health, growth and physiology, chemical ecology, bio-deterioration, photo-bioreactors, food and feed ingredients, algal physiology, products and processes, bioremediation, wastewater treatment, commercial applications of algae, Charales, algal toxins and bioactive molecules, pigments and antioxidants, lipids and polyunsaturated fatty acids, algae and aquaculture and algae and genetics.
Besides the oral presentations two workshops were organized, one on algae and health with some interesting views from a sales perspective and lively debate on applications and claims. The second workshop dealt with the Industry -Academia relationships. At this workshop 12 companies were present of which six working in the biofuel area .Different views on the issues were presented and a general concensus was to protect IP through patents and or licensing deals before engaging industry as there is a strong urge to work together. As a consequence of the workshop the ISAP society might dedicate a session in the next conference dealing with patenting, licensing and IP protection.
Three more sessions dealt with the biofuels and CO2 sequestering issues using algae. In respect of microalgae and biodiesel production, it seems that open pond cultivation is economically the best way to produce large quantities of biomass. In the case of macroalgae for bioethanol production only large fast growing brown algae are promising, although issues with wild harvest vs cultivation still have to be explored. Besides biofuels some other interesting subject areas were explored by the other keynote speakers. Prof R. Sayre presented his views on microalgal vaccine strategies for the immunization of animals. He developed a microalgal, oral vaccine system as an alternative to injectable, animal-based vaccines. The effective oral delivery of antigens by microalgae provides a safe and inexpensive mechanism to immunize animals.

Prof de Nys elaborated on the use of algal bioremediation options for application to tropical aquaculture that remove nitrogen while providing novel food products, biological fertilizers, and feeds for integrated multi-trophic aquaculture (IMTA). While Prof Codd discussed cyanotoxins and their ecotoxicological and biotechnological applications. Cyanotoxins are now internationally recognized as health hazards and measures are in place, but to widely varying degrees, to reduce the risks which they can present to drinking water supply, recreation, tourism and aquaculture. Besides

cyanobacterial toxins other secondary metabolites were explored Due to its for human health, for life in aquatic environments and for its potential in the pharmaceutical industry.

For the first time, an entire mini symposia was dedicated to Integrated multitrophic aquaculture. This session dealt with the application of seaweed biofilters to clean waste water or excess nitrates and phosphates from intensive aquaculture practices while producing an economically valuable secondary crop or product for the fish and shellfish farmers.

The potential of microalgal biotechnology to yield a vast array of products including foodstuffs, industrial chemicals, compounds with therapeutic potency and bioremediation solutions, has long been recognized. To date, however, only two products have been commercialized: carotenoids and polyunsaturated fatty acids. The mini symposium chaired by Prof Bousiba dealt with Carotenoids and polyunsaturated fatty acids and their commercial production and applications. At present a number of new applications are being developed related to the pharmaceutical, cosmetics and health and food industries.

Among the other sessions was a short but interesting one on the problems due to subaerial algal growths on artificial surfaces. Biodeterioration caused by subaerial microalgae is a common problem for artificial substrata, and it is particularly important when it affects monuments or buildings of great aesthetical significance. The damage caused by microalgae may be strictly aesthetical (by production of black, red, orange or green disfigurements) or may be of mechanical nature (by directly or indirectly causing disintegration of the surfaces affected).

At the 10th International Conference on Applied Phycology held in Kunming, China in 2005, a need was expressed by some delegates and EC members to have a larger participation of applied macroalgal research. As a result the 11th ISAP meeting in Galway managed to strike a balanced representation of micro as well as macro algal applied research resulting into a large number of 430 delegates attending this conference. To provide a home for applied micro and macro algal research will help to develop the ISAP society into a vibrant and expanding organization for years to come.

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