

## 3<sup>rd</sup> INTEGRATED BIOMASS BURNING INITIATIVE WORKSHOP WITHIN THE *COST ACTION* NETWORK

(Schloss Ringberg, Bavaria, Germany,  
23<sup>rd</sup>–25<sup>th</sup> April 2014)

Fires in the biosphere are key and frequent phenomena arising naturally or thanks to human activity that are also hard-to-control forces capable of causing severe environmental degradation. It was to the study of such fires – and especially those affecting forests, plantations and peatlands – that the **IBBI** (i.e. the **I**ntegrated **B**iomass **B**urning **I**nitiative bringing together leading scientists from around the world) devoted its third consecutive workshop, attracting several tens of scientists from all the world's continents. The three days of intensive meetings and deliberations saw many very interesting papers and communiques presented, in the process giving a fuller and more up-to-date picture of the state of knowledge regarding the causes and consequences of biosphere fires, as well as the possibilities for them to be safeguarded against. The objective of this meeting was to determine the new thrusts to relevant research, in particular as regards the significance and influence of biomass burning on the state of the biosphere in the Earth's different climatic zones.

The session commenced with a presentation of the scope of activity to date as regards two ongoing and evolving European projects, i.e.:

- **IBBI–2014**, the **I**ntegrated **B**iomass **B**urning **I**nitiative (**Prof. Johannes Kaiser** of the Max Planck Chemistry Institute, Germany – as principal organiser of the workshop);
- the **BIBEX**, the **B**iomass **I**ntegrated **B**urning **EX**periment heritage (**Prof. Johann G. Goldamer** of the United Nations University (UNU) in Freiburg, Germany).

Further participants at the meeting were there to represent a number of international organisations like the WMO, NASA and the European Commission, as well as many institutions, research institutes and higher education establishments at which the influence of fire on the biosphere is being studied. It was at the initiative of the IGBP European Alliance that an invitation to participate in the IBBI workshops was extended to **Prof. M. Gutry-Korycka**, in her capacity as Deputy Chair of the Polish National IGBP Global Change Committee of the Polish Academy of Sciences, itself the initiator of the international FDIFPI (**F**ire **D**isaster in **F**orests & **P**eat bogs **I**mpacts) Project, which was first announced in Helsinki in December 2013.

The direct aim of the meeting was to seek to assess the state of contemporary knowledge, as well as future IBBI research within a time horizon extending to the year 2020.

The subject matter of papers presented at the meeting was assigned to groups as follows:

- Climate and global vegetation modelling;
- Global and regional atmospheric chemistry modelling;
- Fire and plume processes modelling;
- Emission inversion;
- Satellite observation of fires and plumes (fire radiative power);
- Suborbital observation of fires and plumes;
- Anthropogenic interaction;
- Special issue of atmospheric environment.

Several papers were given in each area, the result being an effective summary and synthesis of the long-term research work being carried out.

It needs to be recalled that the 3<sup>rd</sup> IBBI workshop was organised under the auspices of several key world programmes, including those of the WMO, EC and IGBP – as regards core projects known as iLEAPS (the integrated Land Ecosystem-Atmospheric Processes Study) and IGAC (the **I**nternational **G**lobal **A**tmosphere **C**hemistry Project).

The level of the experimental and monitoring results presented was found to be very high, and well capable of making it clear just what state of advancement has been reached in association with the use of modern techniques and technologies. Both satellite studies and aerial photography are being made use of, in association with modern methods and techniques by which measurements can be made both from the air and on land.

The representative of EFFIS (the **E**uropean **F**orest **F**ire **I**nformation **S**ystem) in turn presented the structure and activity of the EU System in question, as regards the services in charge of protecting forests against fire. The System in fact entails monitoring at all stages, from the situation pre-fire through to post-fire analysis, this in itself facilitating fire prevention, firefighting and the assessment of levels of destruction. Cooperation involving 24 states (Poland included, via the Forest Research Institute) is currently ongoing, with transfers of information including basic statistics,

geographical locations and information on the causes of forest fires and the categories of land use affected by burning.

The greatest number of papers were concerned with approaches to mathematical modelling and the computer-aided simulation of combustion processes concerning different kinds of biomass with work addressing the causes of feedback processes, the development of fires, and the influence of the meteorological and anthropogenic processes inducing fires in forests or scrub. Much attention was paid to forecasting and monitoring of greenhouse gas emissions and ambient levels (aerosols, nitrous oxide, carbon monoxide and dioxide and methane).

Two papers were given by Polish workers the organisers had invited. **Agata Hościlo, D. Eng.**, of the Warsaw – based Institute of Geodesy and Cartography presented results of work on peatland fires in Indonesia and Poland's Biebrza Basin, as this made use of satellite data; while **Prof. M. Gutry-Korycka** herself (on behalf for the Polish National IGBP Committee of the PAS) addressed the overall issues of forest, peatland and plantation fires as these justify joint research of a holistic and ecological nature. The Polish side also sought to justify the value of joint interdisciplinary action in relations to the forecasting of meteorological, hydrological and anthropogenic factors conditioning the occurrence of fires and other events involving burning in the biosphere in Central and Northern Europe, with time horizons extending to 2030 and even 2100. Long-term forecasting of this kind is considered very necessary for a full appreciation of future climate change that at once favours increased occurrence of fires and changes in biomass attendant upon evolution of climate globally and locally.

While rather in the nature of working meetings, the workshops to date have proved very helpful in the way they crystallise ideas on future international research cooperation relating to forest fires and the whole gamut of related issues, most of all as regards global warming as influenced by and influencing fires.

The sessions held in a 20<sup>th</sup> century castle passed off in a friendly atmosphere much contributed to by the awakening of spring at the foot of the Bavarian Alps.

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