



# The Baltic University Programme NEWSLETTER

**N:o 2/2005**

March 15

## Contents

Report from the conference on **Sustainable Chemistry & Biotechnology** in Zittau and Wroclaw, by Markus Will.

The BUUF project enters a new stage. Article by project leader Lars Rydén.

The Big Thaw - Christian Andersson writes about **global warming**.

Conference **Calendar** 2005

## The Next Newsletter

The next issue of the BUP Newsletter will be published in May 2005.

## Contributions welcome

We are always interested in articles or announcements, that can be included in the newsletter. Please send material to:

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Prof. Walter Leal Filho giving a presentation in St. Marienthal Photo: Markus Will.

## Sustainable Chemistry & Biotechnology 2005

**40 researchers from Germany, Poland, Sweden, Finland, the Netherlands and Lithuania met in the convent St. Marienthal near to Zittau (Germany) and Wroclaw (Poland) between 15–19 February 2005.**

The first part of the conference took place in the ancient convent in St. Marienthal. Several high quality contributions were presented stressing the challenges of Chemistry and Chemical Industry to support Sustainable Development, such as the GreenChem Programme or chemical reactions under usage of microwaves. In a more biotechnology focused session, approaches on PAH degradation in soils, analysing of phytophthora infections in forest soils or usage of fungi as biocatalyst and modified polysaccharides in wastewater treatment were emphasized. Additionally the interesting field of metrology as a precondition for Sustainable Chemistry was introduced and the issues and goals of the important Watersketch project ([www.watersketch.net](http://www.watersketch.net)) were presented. Within a lecture on the New Chemicals Policy of the EU (REACH) a discussion on the adaption of the Commission's plan by the industry was initiated.

On the second day, a bus picked up the participants at snowy St. Marienthal to transfer them to the life science laboratories of the Hochschule Zittau/Görlitz and later to an excursion at the BASF chemical facilities in Schwarzheide. In Goerlitz, the participants crossed the rebuilt "Altstadtbrücke" bridge, connecting Goerlitz and Zgorcelez. Being very time efficient, the participants decided to prepare the workshop for the next afternoon during a bus session, moderated by Lars Rydén (BUP director).

On Friday, a further variety of approaches on Sustainable Chemistry and Biotechnology were presented with particular focus on bioremediation of soils, waste treatment, and phosphate recovery related to water treatment. Other focal points were the usage of renewable materials for chemical and pharmaceutical industry. Also policy issues, especially the IPPC directive were emphasised. After dinner, the workshop session started aiming in a proposal for a modularised lecture on international and EU policy (esp. IPPC and REACH), Sustainable Biotechnology and Sustainable Chemistry.

Within a brainstorming session, moderated by Bernd Delakowitz (scientific board of the conference), possible issues were identified and discussed. The workshop laid the basis for further cooperation of different institutions and scientists toward a new BUP module on "Sustainable Chemistry and Biotechnology" which may be used in various MSc courses.

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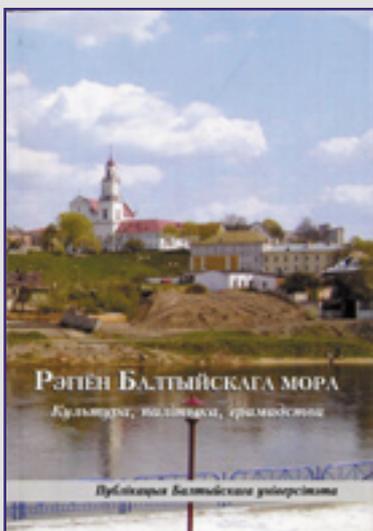
## NEW PUBLICATION:

The belarusian edition of "The Baltic Sea Region – Cultures, Politics, Societies" is now available!

The book contains essays and articles by several authors from numerous academic institutions around the Baltic Sea region. It covers a wide range of subjects, from politics and an analysis of social conditions to essays on history, art, culture and articles on geography and environment of the region.

The editor, prof. Maciejewski works at Adam Mickiewicz University in Poznan, Poland. He is a mentor on the BUP course on Peoples of the Baltic.

Contact the Belarus BUP Centra at the National Technical University in Minsk, for more information.  
Centre Director:  
Dr Siarhei Darozhka  
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With a guided city tour in Wroclaw, the very successful conference ended, at least for the most of the participants. Markus, one of the local organisers, hereby wishes to acknowledge and thank all participants for worrying about him and his shoulder. Special thanks to Jerzy Niecko (Lublin, Poland) for taking care and organising a safe return.

Markus Will  
freelance engineer, Görlitz, Germany  
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Left: The conference site of the convent St Marienthal. Photo: Markus Will. Below: The logos of the organisations arranging the Sustainable Chemistry & Biotechnology Conference.



### Why sustainable chemistry is important

Not everyone did reflect on why sustainability might be an important part of professional competence in chemistry. Here are a few reasons:

- Chemical industry uses vast amounts of non-renewable resources, especially petrol. In a sustainable society these have to be exchanged for renewable resources.
- Chemical products are too often toxic to humans and ecosystems. Such products need to be exchanged for non-toxic substances.
- Chemical reactions are too often made under extreme conditions (in organic solvents, high temperature and using special catalysts) and with poor results (low yield and nasty side products). We need to learn from the living cell, where advanced organic reactions take place in water and room temperature with high efficiency.

The conference in Zittau/Görlitz and Wroclaw proved that there are many solutions to these issues. Zittau researchers led by Dieter Grein impressed everyone with their microwave heated reactions, which were energy-efficient, with few side products and completed in very little time, often seconds instead of hours. Erik Andersson from the Lund University GreenChem programme demonstrated how petro chemistry can be replaced with rape seed oil for several industrial products. Many of the participants showed how nature, e.g. fungi or bacteria from hot springs, have a very useful set of enzymes for all kinds of reactions.

Just as chemists look into what sustainability means to them, all professions need to do the same. Baltic University has so far touched on e.g. sustainable agriculture, sustainable management of water resources, sustainable architecture and sustainable forestry. It is to this "hands on level" that we need to come to promote a real change of our societies.

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N:o 2/2005

March 15

# 2005 Conference Calendar

## April

5-9 April: **BUUF Conference**  
"Integrating Water-Energy-  
Waste management", Tartu,  
Estonia & Tukums, Latvia

14-15 April: **Research for and  
on Sustainable Development**,  
Västerås, Sweden

20-24 April: **Students' confe-  
rence**, Borki, Poland

## May

11-14 May: **Integrative app-  
roaches to Sustainability**  
– sharing experiences, Jur-  
mala, Latvia.

25 May: **BUP Board meeting**

## June

5-8 June: **BUUF Conference**  
Integrating Traffic - Green struc-  
tures - Rebuilding and remedia-  
tion planning, Lodz, Poland

16-19 (prel. dates) June **BUP  
Centres meeting**, Kaliningrad,  
Russia

## August

1-4 Aug: **BUUF Conference** The  
cities and citizens, Vieliky Novgo-  
rod, Russia

1-12 Aug: **Students summer  
camp**, Mazurian Lakes, Poland

**Students sailing cruise**, Baltic  
Sea/Chopin (dates not decided)

**BUUF, The Baltic University Urban Forum, enters a new stage:**

## Cities developing a systems approach!

**A systems approach means that dif-  
ferent processes are coordinated to  
create new resources.**



*The green buses from Gamla Uppsala Buss AB  
run on biogas.*

Organic waste fermented to produce biogas used for driving buses illustrates how waste is turned into resources. It also demonstrates that there is an economic benefit – you do not have to buy diesel, and welfare gain – exhausts from buses becomes much less. The example also points to benefits of recycling instead of having linear flows, and use of renewable resources instead of fossil fuel, all necessary for sustainability.

Another example is when an old deserted factory is turned into a nice apartment house. Here it is the built environment that is recycled. Again it is possible to point both to economic and welfare gains.

## Integration of strategies in focus during 2005

In order to approach sustainability, cities need to find many more such strategies. This is one important task in the Baltic University Urban Forum, BUUF, project. BUUF is the largest applied project Baltic University ever has organised. 20 cities and towns, 15 universities and a total of 40 partners meet to develop local sustainability strategies. In 2005 the project enters its third year. This year we will work on integration of strategies.

- At the first meeting energy, waste and water management will be the topic. We will look both at how to achieve integration – that is technical solutions – and how to organise it in the city – the administrative part.
- A second meeting will deal with coordinated management of urban planning issues – traffic and transport, urban green structures and rebuilding and restoration of polluted areas, so called brown fields.
- A third meeting will deal with integrated management of socio-economic issues.

Concretely it is a question on how to reduce costs and increase well-being by applying a systems approach. Theoretically it is a question of coordinated management of all material flows, or resources in general. In the end, we will look at integration of all aspects – the total systems approach. The sustainability paradigm stresses that environmental, economic and social dimensions are always present. But it is not so often it is actually taken into account. In the BUUF project we aim to do so.

The conferences will all be announced on the website [www.balticuniv.uu.se/](http://www.balticuniv.uu.se/) BUUF. In 2005 we will organise conferences in Estonia, Latvia, Poland, Sweden, Russia and Belarus. The project is presently preparing for the publication of ten guide-books for local sustainability strategies. We hope these will be of more general use and interest.

*Lars Rydén  
BUUF project leader*

N:o 2/2005

March 15

# 2005 Conference Calendar

continued

## September

1-4 Sept: **BUUF Conference**  
Socio-economic development,  
Hällefors/Norrköping, Sweden

19-22 Sept: **BUP teachers'**  
**conference**, Sustainable Com-  
munity Development Uppsala,  
Sweden

## October

**BUUF Conference**, Minsk,  
Belarus

... more dates will be  
added later...

[www.balticuniv.uu.se](http://www.balticuniv.uu.se)

## The Big Thaw

**Once many, many million years ago Earth may have been one big snow ball. The oceans were covered by ice also in the equatorial region. Since then climate has changed considerably, sometimes slow and sometimes faster, and evolution produced human beings, us. The causes for the snowball earth are unclear but the consequences are easy to grasp. It was a truly rough time for all life.**

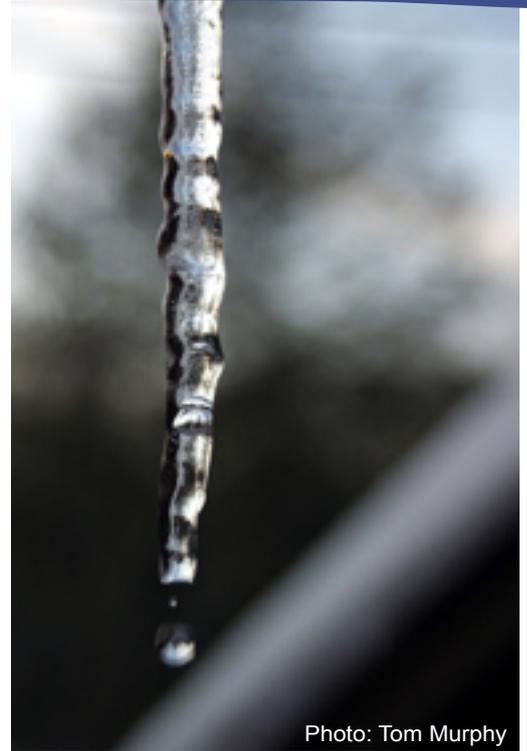


Photo: Tom Murphy

Today the situation is completely different. In general the climate is mild, although the end of this winter was a cold one. Instead we are facing a global warming of hitherto unprecedented proportions. If the predictions of the Intergovernmental Panel on Climate Change (IPCC) comes true, the annual mean temperature will have increased with at least 3-4° C by the year 2100. The permafrost may thaw and the polar caps melt. It is of course easy to indulge in all the negative consequences this raise in temperature may lead to. However, a typical trait of the human race is to be able to plan for the future and take action if the prospects are too grim.

The Kyoto-protocol that recently was ratified and came into effect will not solve the global warming problem but it may be the first step on a long journey. It has been suggested that what we really need is a new Manhattan-project. If you do not know, the Manhattan-project was the gigantic, and in a way successful, undertaking in the US during World War II to develop the A-bomb. The new Manhattan-project would rather be to convert all cars in our society to run on mixtures of fossil and renewable fuels or only on renewable fuels. The technology is already here and it would lead to significantly reduced amounts of emitted greenhouse gases if it was employed. So why not begin with all the cabs on today's Manhattan? Then we take Berlin.

As of writing, we have just had some of the coldest days of this winter. But the sun is back and warms nicely. Great tits sing their bicycle pump song, magpies collect twigs and I heard a tawny owl say hoo-ho-ho the other night. In other words spring is just around the corner, the snow will melt and summer is not far away. Enjoy!

*Christian Andersson*