

Preliminary program for XVIII ISBC in Lund, Sweden

1-4 June 2014

(ver 3, updated 14 May 2014)



General information

Except otherwise noted, all events take place at *Palaestra* (lecture hall and room 105) at “Universitetsplatsen” (see map below)

The presenting authors (both oral and posters) are underlined in the program.

Information for presenters

Oral presentations

Oral presentations are 15 min (this includes time for questions), except for the Lavoisier lecture and a few “plenary” lectures that are longer. Check the length of your presentation!

Please deliver your presentations (PowerPoint) to the person at the computer in the lecture hall well in advance of your presentation.

As this conference covers the whole range from small molecules to large animals and ecosystems, the majority of the people in the audience will not be experts in your field. Therefore start with a quick background (why is this interesting?). Also, do

not plan to show a lot of results or very detailed results as the presentation time is short. Talk 12 min and leave a few min for questions.

Poster presentations

The poster boards are 190 cm high and 90 cm wide (the height is counted from the floor), so an A0-size poster (width 841 mm × height 1189 mm) is fine.

Posters can be exhibited during the whole conference. Put them up when you arrive at Palaestra on Monday and take them with you when you leave.

There will be three poster sessions A, B and C, one each day. Check in the list of posters for which day your presentation is.

Before each poster session there is time for short (1 min) presentations of each of the posters using 1 slide each. If you want to advertise your poster in this way, please deliver your presentations (PowerPoint) to the person at the computer in the lecture hall well in advance of your presentation.

As this conference covers the whole range from small molecules to large animals and ecosystems, the majority of the people looking at your poster will not be experts in your field. Therefore include a short background (why is this interesting?) and do not place too much detailed information in your poster.

Sunday 1 June 2014

18:00 – 20:00 Registration and Reception, Lund Museum of Public Art

Monday 2 June 2014

08:00 Registration

09:00 Welcome

09:05 Lavoisier lecture by Urs von Stockar

“Energy dissipation and performance in microbes, animals, and distillation columns”

10:00 Break

10:30 Session 1: Animals

10:35	<u>Y. Montanholi</u> , K. Colliver, J. Doelman, A. Fontoura, S. Lam, S. Miller	Bovine feed efficiency evaluated through indirect calorimetry and infrared imaging	oral	animal	57
11:00	L. Castellanos, <u>A. Torres</u> , W. Hoffmann and I. Lamprecht	FTIR and thermal analysis of nest paper in nine species of Polistinae wasps from Colombia	oral	animal	33

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11:15	<u>H.K. Cammenga</u> and K. Gehrich	The gonadal fat deposits of the African Elephant - A latent heat storage?	oral	animal	31
11:30	<u>M. Jakubowska</u> , M. Normant and J. Drzazgowski	The heat production of blue mussel <i>Mytilus edulis trossulus</i> - is there a synergistic effect of water acidification and oxygen deficiency?	oral	animal	4
11:45	A. Feldmann, P. Schmidtke, <u>D. Singer</u>	Microcalorimetry and Microrespirometry of Human Placental Samples: A Feasibility Study	oral	animal	50
12:00	Lunch				
13:30	Session 2: Animals (continued)				
13:35	<u>J. Röttgers</u> , J. Koch, M. Wolf, D. Singer	Heat Flow Measurement in Human Preterm Neonates: Towards a “Calorimetric” Incubator	oral	animal	49
13:50	<u>P. Junghans</u> , A.-H. Tauson, A. Chwalibog	Indirect calorimetry and N balance measurements may be affected by endogenously produced nitrogen	oral	animal	48
14:05	L. G. Neven, N. Lehrman and <u>L. D. Hansen</u>	Effects of temperature and modified atmospheres on diapausing 5th instar codling moth metabolism	oral	animal	46
14:20	Short presentation of (10) posters in poster session A: Animals and Food				

14:30 Break and Poster session A: Animals and Food

15:30 Session 3: Food

15:35	<u>R. Vilu</u> , N. Kabanova, I. Stulova, A. Seiman and K. Adamberg	Isothermal microcalorimetry and development of systems biology of bacteria growing in solid state and opaque liquid media	oral	food	26
16:00	S. Adamberg, K. Tomson, H. Vija, M. Puurand, N. Kabanova, <u>R. Vilu</u> and K. Adamberg	Metabolism of prebiotic fructans by colon microbiota studied by isothermal microcalorimetry	oral	food	27
16:15	S. Tappi, U. Tylewicz, S. Romani, M. Dalla Rosa and <u>P. Rocculi</u>	Effect of vacuum impregnation with calcium salts on quality and metabolic aspects of fresh-cut melon	oral	food	62
16:30	V. Panarese, P. Rocculi, L. Wadsö, A.G. Rasmusson and <u>F. Gómez Galindo</u>	Modulating metabolic activity by controlled vacuum impregnation of spinach leaves	oral	food	42
16:45	<u>S. Tappi</u> , U. Tylewicz, A. Berardinelli, S. Romani, L. Ragni, M. Dalla Rosa, P. Rocculi	Effect of cold plasma on fresh-cut fruit tissues metabolism	oral	food	56

17:00 End of day 1

Tuesday 3 June 2014

08:30 Session 4: Instrument and method

08:35	<u>L. Wadsö</u>	The ice calorimeter of Lavoisier and Laplace	oral	method	32
08:50	<u>J. Lerchner</u> , T. Hartmann, A. Wolf, J. Schemberg, A. Grodrian and F. Mertens	Chip calorimetry of aggregated biological samples in segmented flow	oral	method	7
09:05	Jihye Kim, Jonghyun Kim, Joonyoung Koh, and <u>Wonhee Lee</u>	Parylene microfluidic calorimeter integrated with vanadium oxide thermistor	oral	method	11
09:20	<u>S. Paufler</u> , H. Sträuber, H. Harms, and T. Maskow	Difficulties in interpretation of high resolution anaerobic biocalorimetric data due to non-perfect reference analysis	oral	method	19
09:35	<u>I. Wadsö</u>	Will isothermal microcalorimetry ever become a routine method for estimation of 'bio-activity'?	oral	method	51

09:50 Break

10:30 Session 5: Instrument and Method (continued)

10:35	<u>J-H. Ferrasse</u> and A. Soric	Preliminary modeling of a continuous calorimetric set-up for aerobic measurement	oral	method	58
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10:50	<u>U. Hess</u> , S. Paufler, T. Maskow, H. Nilsson	High Sensitive Reaction Calorimetry for Anaerobic Biotechnology	oral	method	44
11:05	<u>C. Ortmann</u>	Investigation of contaminated soils	oral	method	43
11:20	<u>M. Suurkuusk</u>	New and modernized isothermal calorimeters open new possibilities	oral	method	35
11:35	Short presentation of (8) posters in poster session B: Method and Instrumentation, and Microbiology				
12:00	Lunch				
13:30	Session 6: Microbiology				
13:35	<u>Thomas Maskow</u> , Frida Mariana Morais, Sven Paufler, Luis Rosa, Qian Yi Guang, Falk Harnisch, Hauke Harms	How reliable is isothermal microcalorimetry of growing cells in the wake of oxygen limiting conditions?	oral	microbiology	3
14:00	<u>M.-T. Weichler</u> , S. Paufler, T. Rohwerder, H. Harms and T. Maskow	Calorimetric Process Control for Microbial Product Formation Using Toxic Feedstocks	oral	microbiology	1

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14:15	<u>M. Fredua-Agyeman</u> , A. Basit, P. Stapleton, A. Beezer, S. Gaisford	A real-time study of defined mixed cultures of bacteria	oral	microbiology	2
14:30	<u>T. Hartmann</u> , A. Wolf, F. Mertens and J. Lerchner	Antibacterial activity of commercial nAg and nTiO ₂ against beads-grown <i>P. putida</i> biofilms – a chip-calorimetric study	oral	microbiology	8
14:45	<u>O. Braissant</u> , D. Wirz, P. Grüner, A. Bachmann and G. Bonkat	Determining the antimicrobial properties of coatings and porous biomaterials by taking advantage of isothermal microcalorimetry	oral	microbiology	16

15:00 Break and Poster session B: Method and Instrumentation, and Microbiology

16:00 – 17:00 Social event

19:00 – 22:00 Conference dinner, “Pelarsalen”, Lund University Building

Wednesday 4 June 2014

08:30 ISBC Meeting

09:00 Session 7: Ecology and Soil

09:05	<u>L. D. Hansen</u> , G. L. W. Hart, M. Transtrum and C. W. Hansen	Completing the temperature function in metabolic theories of ecology	oral	ecology	45
09:30	<u>T. Bölscher</u> , L. Wadsö, G. Börjesson and A.M. Herrmann	Microbial energetics of soils exposed to different temperatures and land uses	oral	soil	13
09:45	<u>Anke M. Herrmann</u> , Kristin Boye, Tobias Bölscher, Naoise Nunan, Elsa Coucheney, Michael Schaefer and Scott Fendorf	Revisiting the terrestrial carbon cycle: New insights into microbial metabolism	oral	soil	21

10:00 Break

10:30 Session 7: Molecular

10:35	<u>V. Kocherbitov</u>	Application of sorption calorimetry for studies of hydration of biomolecules	oral	molecular	29
11:00	A. Nowacka, D. Q Pham, S. Björklund, F. Costa-Balogh, S. Douzan, H. Wennerström, D. Topgaard, L. Wadsö, <u>E. Sparr</u>	How small polar molecules protect membrane systems against osmotic stress	oral	molecular	47

11:15	<u>S. Winzen</u> , S. Schoettler, C. Rosenauer, G. Baier, V. Mailaender, K. Landfester and K. Mohr	Protein Adsorption on Nanocapsules: Demonstrating the Differences between the Hard and Soft Corona	oral	molecular	12
11:30	<u>K. Honarmand Ebrahimi</u> , P.L. Hagedoorn, W.R. Hagen	Isothermal titration calorimetry for biocatalysis: Measuring metal ion binding to proteins and catalytic activity of enzymes	oral	molecular	37
11:45	Short presentation of (13) posters in poster session C: Soil, Plants and Molecular				
12:00	Lunch and Poster Session C: Soil, Plants and Molecular				
13:30	Session 8: Molecular (continued)				
13:35	A. Zubrienė, V. Morkūnaitė, L. Baranauskienė, J. Gylytė, J. Kazokaitė, A. Kasiliauskaitė, A. Smirnov, L. Manakova, E. Čapkauskaitė, V. Dudutienė, V. Jogaitė, V. Michailovienė, J. Matulienė, S. Gražulis and <u>D. Matulis</u>	Thermodynamics of anticancer fluorinated lead binding to target carbonic anhydrases by isothermal titration calorimetry and thermal shift assay	oral	molecular	25
14:00	<u>J. M. del RÍO</u> and J.-P. E. Grolier	Application of the Gibbs-Duhem equation to the study of the relation between forward and reverse titration in ITC	oral	molecular	53
14:15	<u>K. Bhadra</u>	Isoquinoline alkaloids and their binding with DNA: Calorimetry and thermal analysis applications.	oral	molecular	52

14:30 – 15:00 Closing session

Posters

#	Authors	Title		Subject	Poster session
23	<u>Y. Cardona</u> , A. Torres, W. Hoffmann and I. Lamprecht	Thermoanalytical analysis of wood used for nest sites of the carpenter bee <i>Xylocopa lachnea</i>	poster	animal	A1
24	F. Pinzón, <u>A. Torres</u> , W. Hoffmann and I. Lamprecht	Combustion calorimetric investigations of nest paper in wasps from Colombia	poster	animal	A2
36	L. Peña–Caraballo, P. Torres–Sanchez, A. Cárdenas–Figuerola, and A. Torres	Host Preference and Performance of Lichenivorous <i>Astylus</i> sp. adults (Coleoptera: Meliridae) in Relation to Lichen energy contents and heat production rates	poster	animal	A3
5	L. Marszewska, <u>M. Normant</u> and R. Schubring	Energy value of Norway lobster <i>Nephrops norvegicus</i> (Linnaeus, 1758) from the North Sea	poster	animal	A4
6	<u>M. Normant</u> , K. Kurpisz, M. Jakubowska and J. Drzazgowski	Oxygen-related behaviour and heat output in the the Baltic clam <i>Macoma balthica</i>	poster	animal	A5
14	<u>Katarzyna Dymek</u> , Petr Dejmek, Lars Wadsö and Federico Gómez	Enhanced metabolic activity of spinach baby leaves as a consequence of pulsed electric field treatment (PEF) and vacuum impregnation (VI)	poster	food	A6
22	<u>N. Kabanova</u> , A. Popov and R. Vilu	Application of microcalorimetric method for the study of diffusion processes in gelatin matrices	poster	food	A7

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40	<u>L. Wadsö</u> and F. Gomez	Lactic acid fermentation studied by isothermal calorimetry	poster	food	A8
63	<u>S. Tappi</u> , U. Tylewicz, E. Cocci, S. Romani, E. Betoret, M. Dalla Rosa and P. Rocculi	Influence of ripening stage on metabolic heat production of fresh-cut kiwifruit and melon	poster	food	A9
X	<u>K. Fransson</u> , H. Nilsson and I. Sjöholm	Calorimetry, a useful method for determination of unfrozen water in food below freezing temperature	poster	food	A10
39	L. Wadsö	A new calorespirometric vessel for isothermal calorimeters	poster	method	B1
9	A. Wolf, <u>T. Hartmann</u> , J. Schemberg, A. Grodrian and J. Lerchner	Segmented-flow technology enhances chip calorimetry	poster	method	B2
59	<u>Gillian Lewis</u> and Wayne Bowen	The application of chipCAL, a flow microcalorimeter (FMC) for high throughput analysis of enzyme activity	poster	method	B3
18	<u>O. Braissant</u> , A. Egli, D. Wirz, R. Frei, A. Widmer, A. Bachmann and G. Bonkat	Combination of isothermal microcalorimetry and mass-spectrometry for rapid drug susceptibility testing in suspected urosepsis	Poster	microbiology	B4
20	<u>C. Paul</u> , A. Johansson, P. Rådström, K.M. Persson and M. Jansson	Isothermal microcalorimetry with reporter bacteria for assessment of nutrient content in source and processed drinking water	poster	microbiology	B5
17	<u>O. Braissant</u> , L. Wernli, D. Wirz, A. Bachmann and G. Bonkat	Autophagy: a possible survival strategy for <i>Candida spp.</i>	poster	microbiology	B6

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38	<u>M. Kula</u> , D. Saja, M. Rys and A. Skoczowski	The influence of spectral composition of light on the metabolic activity of <i>Chlorella emersonii</i> and <i>Botryococcus braunii</i> in the dark	poster	microbiology	B7
60	<u>J. Lerchner</u> , T. Förster, F. Mertens and K. Lemke	Chip calorimetry on spheroids: Study of proliferation and viability	poster	microbiology	B8
30	<u>C. Albèr</u> , J. Engblom and V. Kocherbitov	Hydration of Sodium Hyaluronate Studied by Sorption Calorimetry and Differential Scanning Calorimetry	poster	molecular	C1
34	<u>E. Dejmková</u> , J. Mrázková, L. Malinovská, L. Adamová, G. Demo, M. Pokorná, M. Wimmerová	Studies of mutant lectin binding behaviour by microcalorimetry	poster	molecular	C2
41	Ö. Topel	Thermodynamics of interaction between L-serine and TiO ₂ nanoparticles	poster	molecular	C3
55	<u>Q. D. Pham</u> , Daniel Topgaard and E. Sparr	The effect of terpene on phospholipid membranes	poster	molecular	C4
67	<u>V. Morkūnaitė</u> , J. Matulienė, A. Zubrienė, M. Kišonaitė, L. Baranauskienė, J. Jachno, V. Michailovienė, and D. Matulis	Recombinant production and calorimetric characterization of human carbonic anhydrase IX	poster	molecular	C5
54	<u>I. Rakipov</u> , M. Varfolomeev, B. Solomonov	Calorimetric study of intermolecular interactions of model biomolecules in aqueous-organic solvents: the ratio "structure-property"	poster	molecular	C6

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68	<u>H. Trębacz</u> , A. Atras, M. Arczewska, K. Szklener	Thermal denaturation of fibrillar collagen in tissues - effects of glycation	poster	molecular	C7
65	<u>A. Skoczowski</u> and J. Waga	Does storage protein composition influence metabolic activity of wheat seedlings?	poster	plants	C8
10	N. Barros, C. Siewert, V. Piñeiro, A. Wolf, F. Mertens and <u>J. Lerchner</u>	Sensitivity of chip calorimetry to study the degradation of the soil organic matter	poster	soil	C9
15	<u>N. Barros</u> , J.A. Rodríguez, J. Proupín, M. Villanueva, V. Piñeiro, L. D. Hansen, M. T. Dell'Abate	Factors influencing the calculation and evolution of calorespirometric ratios in soils determined by calorimetry	poster	soil	C10
28	<u>Y. Salmanca</u> and Anke M. Herrmann	Simultaneous measurements of microbial energetics, methane and CO ₂ in soils with varying water contents	poster	soil	C11
66	<u>J. Dziejowski</u> , E. Ropelewska	The use of glucose, cellobiose and cellulose for calorimetric studies of soil microbial processes	poster	soil	C12
61	P. Vikegard, <u>N. Barros</u> and V. Piñeiro	Calculation of the Activation Energy to describe sensitivity of soil organic matter degradation to temperature: Application of TAM III	poster	Soil	C13