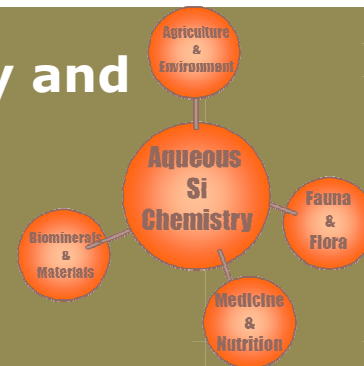


4th Workshop on the Aqueous Chemistry and Biochemistry of Silicon

21st – 23rd JUNE 2011
Homerton College, Cambridge, UK

www.metal-ions2011.com/silicon



TUESDAY 21ST JUNE

14.00-
17.00

Registration

18.00

Plenary Lecture (Auditorium)

Jonathan J Powell (UK) – Beer: Silicon and moderate alcohol consumption in connective tissue Health

19.00

Poster Reception (Fellows dining room)

AGRICULTURE & ENVIRONMENT

Francisco Ribeiro do Vale (Brazil) - Silicon increases bean resistance to anthracnose. PS1

Renata Sousa Resende (Brazil) - Silicon and its interaction with fungicide on the control of anthracnose in susceptible and resistant sorghum lines. PS2

Gisele Pereira Domiciano (Brazil) - Silicon improves photosynthesis in rice plants infected by *Pyricularia grisea*. PS3

Alexander Fleck (Germany) - Suberization of rice root was affected by silicic acid in the nutrient solution. PS4

Dariusz Dobrzynski (Poland) - Germanium versus silicon geochemistry in medicinal and mineral groundwater from the Sudetes and the Carpathians mountains (Poland). PS5

MATERIALS & BIOMATERIALS

Mayumi Etou (Japan) - Silica deposition on tiron-conjugated anion exchange resin as a template for biosilicification in rice plant. PS6

Naren Gaowa (Japan) - Biodeposition of silica in geothermal systems: the role of metal ions. PS7

Katsumi Doi (Japan) - Role of silica-induced protein in biosilicification in *Thermus thermophilus*. PS8

Yasuhiro Fujino (Japan) - Biodeposition of silica in geothermal system: Transcriptional analysis of silica-induced protein. PS9

Wen-Hui Kuan (Taiwan) - Effects of diatomite addition on the enhancement of ammonium removal from college campus wastewater. PS10

Milica Todea (Romania) - The influence of SBF on the surface structure of aluminosilicate microspheres. PS11

MEDICINE AND NUTRITION

Abi Watson (UK) - Age related changes in silicon content of the rat bone. PS12

Zivko Mladenovic (Sweden) - Effects of bioactive glass and orthosilicic acid on osteoclastogenesis and bone resorption *in vitro*. PS13

Katarzyna Kopanska (UK) - The effect of orthosilicic acid on extracellular matrix remodeling in skin fibroblast. PS14

Sarah Ratcliffe (UK) - Dietary silicon in mammals: Identification of a mammalian transporter and its implications on future silicon research. PS15

21.00

End of Poster Reception

WEDNESDAY 22 ND JUNE (BOULIND SUITE)		
8.30	Morning Coffee (Foyer: 1 st floor)	
9.00	Welcome by the organizing committee- <i>Stephen Kinrade (Canada)</i>	
SESSION I: FAUNA, FLORA, AGRICULTURE & ENVIRONMENT		
9.15	Silicon in agriculture. Chair: Richard Bélanger (Canada)	
9:20	<i>Fabricio Rodrigues (Brazil)</i> - A review of silicon 's use on the monocots rice, sorghum, and wheat.	OS1
9.40	<i>Gaspar Korndorfer (Brazil)</i> - Utilization of silicon from metallurgical slag by sugarcane.	OS3
10.00	<i>Henk-Maarten Laane (The Netherlands)</i> - The effects of foliar (stabilized) silicic acid on plants.	OS4
10.20	Coffee Break (Foyer: 1 st floor)	
10.45	Silicon transporters & Global silicon cycling. Chair: Pascal Jean Lopez (France)	
10.50	<i>Jian Feng Ma (Japan)</i> - <u>Keynote Lecture</u> : The biology of silicon.	OS5
11.20	<i>Richard Bélanger (Canada)</i> - Understanding silicon transport in plants to improve disease resistance.	OS6
11.40	<i>Paul Curnow (UK)</i> - Studying the diatom silicon transporter <i>in vitro</i> .	OS7
12.00	<i>Sophie Opfergelt (Belgium)</i> - Impact of freshwater diatom productivity on silicon isotopes and silicon fluxes: Lake Myvatn, Iceland.	OS8
12.20	<i>Miho Tanaka (Japan)</i> - Silica uptake by diatom in spring predicts summer temperature.	OS9
12.35	Lunch break (Fellow's dining room)	
SESSION II: CHEMISTRY, MATERIALS & BIOMATERIALS		
13.55	Silica biomineralisation: Formation and function. Chair: Carole Perry (UK)	
14.00	<i>Mark Hildebrand (USA)</i> - Biogenic nanostructured silica formation in diatoms: Proteins, genes and structure.	OS10
14.20	<i>Pascal Jean Lopez (France)</i> - Impacts of acidification on the silicification process in diatoms.	OS11
14.40	<i>Alan Marron (UK)</i> - Silica biomineralization in loricate choanoflagellates, the sister group to metazoans.	OS12
15.00	<i>Heinz-Christoph Schröder (Germany)</i> - Structure-guided mechanism of silica polycondensation reaction during enzymatic sponge spicule formation.	OS13
15.20	<i>Lijin Wang (China)</i> - Extracellular silica nanocoat confers thermotolerance to individual cells.	OS14
15.40	Coffee Break (Foyer: 1 st floor)	
16.10	<i>Katsumi Doi (Japan)</i> - Role of silica-induced protein in biosilicification in <i>Thermus thermophilus</i> .	PS8
16.25	Aqueous silicon compounds. Chair: Stephen Kinrade (Canada)	
16.30	<i>Takushi Yokoyama (China)</i> - Silicic acid-tiron complex in aqueous solution.	OS15
16.50	<i>Reinhold Tacke (Germany)</i> - Pentacoordinate silicon compounds: Potential applications as food supplements?	OS16
17.15	<i>Abdelfattah Badawi (Egypt)</i> - On the aqueous chemistry, environmental chemistry and biological activity of cationic silicon compounds.	OS17
17.35	Closing	
19.00	Formal Dinner (Great Hall)	

THURSDAY 23RD JUNE (BOULIND SUITE)

8.30	Morning Coffee (Foyer: 1 st floor)	
SESSION III: MEDICINE AND NUTRITION		
8.55	Si and connective tissue health. Chair: Reinhold Tacke (Germany)	
9.00	<i>Ravin Jugdaohsingh (UK)</i> - Dietary silicon and connective tissue health.	OS18
9.20	<i>Priya Kalia (UK)</i> - Adsorption of silicon on to hydroxyapatite surfaces from aqueous silicate solutions modulates the adhesion of primary human osteoblast cells.	OS19
9.40	<i>Peter Sharratt (UK) & Stephen Kinrade (Canada)</i> - Isolation of the rare Si-binding amino acid (2S,3S,4R)-dihydroxyproline from guinea-pig bone.	OS20
10.05	<i>Heinz-Christoph Schröder (Germany)</i> - Biosilica: Effect on hydroxyapatite formation and osteoprotegerin/RANKL ratio in SaOS-2 cells.	OS21
10.25	<i>Zivko Mladenovic (Sweden)</i> - Effects of bioactive glass and orthosilicic acid on osteoclastogenesis and bone resorption <i>in vitro</i> .	PS13
10.40	Coffee Break (Foyer: 1 st floor)	
11.10	<i>Carole C. Perry (UK)</i> - The role of silica in composite materials for bioengineering applications including bone regeneration and cell based therapies	OS22
11.35	<i>Diana Kozlova (Germany)</i> - Fluorescent core/shell silica-coated hydroxyapatite nanoparticles for bioconjugation	OS23
11.55	<i>Henk-Maarten Laane (The Netherlands)</i> - Silicon for humans and plants: similarities and differences.	OS24
12.10	<i>Ravin Jugdaohsingh (UK)</i> - Assessment of the toxicology and safety of chronic monomethyl silanetriol administration in the rat	OS26
12.25	Closing remarks- <i>Stephen Kinrade (Canada)</i>	
12.35	Lunch break (Boulind suite)	
Attendees are welcome to join the 11th ISMIBM sessions for the afternoon		