STAV
VCE Chemistry Teachers’ Conference 2005

Friday 18 February 2005 @ Monash University, Wellington Road, Clayton

Each participant will receive a CD of Proceedings from all STAV VCE Conferences Series 2005 as part of their registration.

Conference Program

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<th>Time</th>
<th>Event</th>
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<tr>
<td>8.15am</td>
<td>Registration opens</td>
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<tr>
<td></td>
<td>(Foyer, South One Lecture Theatre, Building 64)</td>
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<tr>
<td>9.00 - 9.10am</td>
<td>Welcome - STAV and CEA</td>
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<td></td>
<td>(South One Lecture Theatre, Building 64)</td>
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<tr>
<td>9.10 - 10.00am</td>
<td>Keynote Address</td>
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<td></td>
<td>(South One Lecture Theatre, Building 64)</td>
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<td></td>
<td>Nanotechnology and the Future of Technology</td>
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<td>Dr Peter Binks, CEO, Nanotechnology Victoria Ltd</td>
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<td>10.00 - 10.30am</td>
<td>A Musical Chemistry Spectacular:</td>
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<td></td>
<td>Gordon Wilson, Mark Collins, Jack Smith &amp; Camberwell Grammar School students</td>
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<td></td>
<td>(South One Lecture Theatre, Building 64)</td>
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<tr>
<td>10.30 - 11.00am</td>
<td>Morning Tea/Displays</td>
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<td>(1st Floor, Campus Centre, Building 10)</td>
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<tr>
<td>11.10 - 11.40am</td>
<td>VCAA Update</td>
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<td>Ann Osman, Science Manager, VCAA</td>
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<td></td>
<td>(South One Lecture Theatre, Building 64)</td>
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<tr>
<td>11.40 - 12.10pm</td>
<td>Small group discussions about Draft Chemistry Design</td>
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<td>12:20 - 1.10pm</td>
<td>Workshops - Session A</td>
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<tr>
<td>1.20pm - 2.20pm</td>
<td>Lunch/Displays (1st Floor, Campus Centre, Building 10)</td>
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<td>2.30pm - 3.20pm</td>
<td>Workshops - Session B</td>
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<td>3.30pm - 4.20pm</td>
<td>Workshops - Session C</td>
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<td>4.30pm</td>
<td>Wine and Cheese (Foyer, South One Lecture Theatre, Building 64)</td>
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Session A  
12.20pm - 1.10pm

A1 Data Loggers, Acids and Bases
John Gipps, Monash University
Using a data logger to illustrate some properties and interactions of acids and bases.
Suitable for: VCE Units 1 - 4
No Limit

A2 One Site On-line Learning for Chemistry
Peter Razos & Greg Hunter, Trinity Grammar
Participants will be introduced to a specifically written website for teachers of Chemistry. This new and exciting site has many demonstrations, animations and video clips to make teaching of chemistry easy and exciting. Participants will be shown how to create their own on line tests and revision resources. This new resource will certainly enhance the classroom teaching of chemistry.
Suitable for: Yrs 7-10, VCE Units 1-4
Limit: 30

A3 Redox Rocks
Kathy Doolan, Minerals Education Victoria
This workshop will showcase Redox Rocks, an essential video for senior secondary chemistry students. It facilitates understanding of the electron transfer process and develops understanding of the varying degrees of reactivity of different metals. Industrial processes used to extract metals from their ores are shown.
Suitable for: VCE Units 1-4
Limit: 30 Extension Education

A4 Chemistry Songs and Jokes
Philip Ponder, Penleigh and Essendon Grammar School
If you can play the guitar, a song now and then will break any monotony that might be setting in (especially last period on a Friday) and a joke a week (or even a joke a day) will add some interest, even if it only results in groans. Bring any songs or jokes you have to share (other than the obvious 'The Elements' by Tom Lehrer) and I’ll share some of mine. If time permits (and on a serious note!), I would like to promote some discussion about removing unnecessary confusion in Chemistry teaching due to ambiguities.
For example:
1. Should we really use 'M' to represent both 'molar mass' and 'mole/L'?
2. Should we use a dash to represent both a single covalent bond and a non-bonding ('lone') pair of electrons?
3. Should we treat H+ as if it is a cation by putting it in Tables of common cations and anions?
Suitable for: VCE Units 1 - 4
Limit: 30

A5 Using Powerpoint in Your Chemistry Classroom
John Jackowski, Scotch College
Several locally developed presentations will be demonstrated: Instrumentation, Transition, Metal Chemistry and more!
Suitable for: VCE Units 1 - 4
No Limit

A6 VCE Chemistry at the Melbourne Aquarium
Lai Dancer, Melbourne Aquarium
This session offers an overview of the VCE Chemistry programs offered at the Melbourne Aquarium. These programs offer students a practical insight into Chemistry in a real world application.
Suitable for: VCE Units 1 & 2
Limit: 30 Extension Education

A7 Fuel Cell Chemistry
Peter Ball, Southern Biological
Unlike batteries, fuel cells supply electrical energy without the need for recharging or replacement. In a clean silent redox reaction, hydrogen reacts with oxygen to release energy, with water being the only by-product. This presentation will give an overview of the different types of fuel cells and the functional chemistry behind them, with particular emphasis on Solid Oxide and Proton Exchange Membrane technologies. An experiment aimed at calculating Avogadro’s Number will be demonstrated to show the relevance to the senior Chemistry curriculum.
Suitable for: VCE Units 1 - 4
No Limit Commercial

A8 History of Chemistry
Pat O’Shea, Loreto College
The history of Chemistry is a fascinating story. This session tracks the scientists involved and explains their contributions and experiments. Many of the experiments are easily reproduced. An understanding of the history leads to genuine understanding of the concepts.
Suitable for: Yrs 7-10, VCE Units 1 - 4
No Limit

A9 Chemical Equilibrium Made Easy
Marino Dereani
Chemical Equilibrium Made Easy is a local production. Its design purpose is to allow teachers to provide an animated graphical representation of a range of chemical concepts with chemical equilibrium as the focal point. The content structure has been designed to follow the CSF II guidelines. Some of the features of the package include: dual level navigation to suit both experienced and inexperienced users; onscreen experimentation, variability in screen function to suit user teaching style; high quality graphics and realistic animations and an interactive teacher to software interface. Chemical Equilibrium made Easy uses cutting edge programming software.
Suitable for: VCE Units 1 - 4
Limit 30 Commercial
Session B
2.30pm - 3.20pm

B1 Seal and Elephant Pool Chemistry
Janine McCoy & Rick Hammond, Melbourne Zoo Discovery & Learning
Discover how a visit to Melbourne Zoo can excite and engage your VCE Chemistry Units 1 & 2 class. The revised Seal and Elephant Pool Chemistry program will allow your students to experience how water chemistry and chemical reactions play an important role in the husbandry of seals and elephants. This workshop will give teachers a glimpse of the program and suggest how it can be used to meet VCE Chemistry Units 1 & 2 outcomes.
Suitable for: VCE Units 1 & 2
No Limit

B2 The Chemical Cauldron
Jenny Sharwood & Jennifer Willis, School of Education, Victoria University
The earth could be thought of as a giant chemical cauldron. In this hands-on workshop you will hear some fascinating stories about how this great cauldron came to be and the earliest alchemists. You will try a variety of fun experiments, including mapping a mineral deposit that is hidden from view, mining for chocolate and extracting copper. Participants will receive a booklet of teaching ideas and some free samples.
Suitable for: Yrs 7-10
Limit: 30

B3 Chemistry Online - excellent ideas and an excellent resource
Peter Razos & Mary Barry, Trinity Grammar
Participants will be introduced to a fantastic online science resource that offers excellent worksheets, demonstrations, teaching ideas and assessment. Participants will have the opportunity to create their own online tests and view the site in detail. Although the site is constructed for general science, the physics and chemistry components are especially detailed and user friendly.
Suitable for: Yrs 7-10, VCE Units 1 - 4
Limit: 25

B4 The CHEMISTRY of Einstein’s 1905 work: The ‘Forgotten’ Papers
Dr Kieran Lim, Deakin University & Jeanne Lee, Loyola College
2005 is the 100th anniversary of Albert Einstein’s Theory of Relativity. This presentation will review the ‘forgotten’ papers on the light-quantum, the photoelectric effect, the determination of molecular size, and diffusion, which also date from 1905: these ‘forgotten’ papers led to his Nobel Prize and are more cited than the Theory of Relativity. Einstein’s work will be linked to the VCE Chemistry Study Design, Unit 2 (diffusion), Unit 4 (atomic theory, periodic table trends) and VCE Physics Unit 1 (properties of light).
Suitable for: VCE Units 1 - 4
No Limit

B5 Chemistry - Interactive Simulations in Your Classroom
Michael O’Brien, Newbyte Educational Software
Good Chemistry simulations can save you time, are easy to use and enhance the understanding of your students. Investigate how the NEW ‘Titrations’, ‘Gas Equilibrium’, ‘Electrochemical Cells’, ‘Haber Process’ and ‘Sunflower’ Software packages work in your classroom. This hands-on workshop will give you some great practical ideas for your class. Learn about the hidden features and full potential of these programs from the developer. I recommend it for both the beginner and experienced users of this software.
Suitable for: VCE Units 1 - 4
Limit: 20

B6 Teaching Units 3 & 4 Chemistry for the First Time
Penny Commons, Southwood BGS
I will aim to provide participants with useful material for teaching Units 3 and 4 Chemistry for the first time. Besides keeping your sense of humour and being organised, there are several ways you can enthuse Year 12 students. The following will be included in the session:
• a timetable with pracs and demos and SAC dates
• some suggestions for SACs
• how I organise SACs
• the questions I require students to complete
• some examples of how I do prac and demos
• some examples of my class notes
• my ideas on revision for the exams. Some brief suggestions for teaching Units 1 and 2 will be available as well.
Suitable for: VCE Units 1 - 4
No Limit

B7 Oresome Froth - Simulating Chemical separation in the minerals industry
Nola Shoring, Minerals Council of Australia & Kathy Doolan, Minerals Council of Australia - Victorian Division
This new resource from the Minerals Council of Australia enables students to become ‘virtual’ metallurgists. They can control the variables and discover the consequences on the mineral separation achieved through the froth flotation process at a virtual mineral processing operation. The minerals industry provides an authentic context for the application of the chemical concepts such as pH, particles size and hydrophobic vs hydrophilic molecules. Each participant in this workshop will have ‘sandpit’ time to explore the resource and will receive a free copy.
Suitable for: Yrs 7-10, VCE Units 1 & 2
Limit: 20

Friday 18 February 2005
Session C
3.30pm - 4.20pm

C1 Meet the Examiners
Prof. Peter McTigue & Nicole Lukins
Department of Chemistry,
University of Melbourne
Review of the 2004 Unit 3 & 4 written exams
No Limit

C2 Fuel Cell Chemistry
(Repeat of A7)
Peter Ball, Southern Biological
Unlike batteries, fuel cells supply electrical energy without the need for recharging or replacement. In a clean silent redox reaction, hydrogen reacts with oxygen to release energy, with water being the only by-product. This presentation will give an overview of the different types of fuel cells and the functional chemistry behind them, with particular emphasis on Solid Oxide and Proton Exchange Membrane technologies. An experiment aimed at calculating Avogadro’s Number will be demonstrated to show the relevance to the senior chemistry curriculum.
Suitable for: VCE Units 1 - 4
No Limit

C3 Making Technology Work in Chemistry
Doug Bail, Ciderhouse ICT
Industrial Chemists have been using it for years. The University of Adelaide, Monash, and other leading universities have adopted it. Now how can you make electronic measure work for you? See how - reliable, fuss and even computer free. Set up in seconds. Learn for hours
Suitable for: Yrs 7-10, VCE Units 1 - 4
Limit: 30

C4 Chemical Equilibrium Made Easy (Repeat of A9)
Marino Dereani
Chemical Equilibrium Made Easy is a local production. Its design purpose is to allow teachers to provide an animated graphical representation of a range of chemical concepts with chemical equilibrium as the focal point. The content structure has been designed to follow the CSF II guidelines. Some of the features of the package include: dual level navigation to suit both experienced and inexperienced users; onscreen experimentation, variability in screen function to suit user teaching style; high quality graphics and realistic animations and an interactive teacher to software interface. Chemical Equilibrium made Easy uses cutting edge programming software.
Suitable for: VCE Units 1 - 4
Limit: 30

Wine and Cheese
4.30pm
(Foyer, South One Lecture Theatre, Building 64)
A chance to network with presenters and other Chemistry Teachers