

welcome to issue 21

June, exam month. It's finally here. To help with the stress this month we are sending you the ChemNet Stress Star, for when you just can't look at your notes anymore. Keep going though. You could be one of the lucky ones who have worked hard and ends up amongst the top 6 chemistry students in the UK. This year the six lucky students who achieve the highest marks in their A-level and Scottish Highers will get the chance to win an all expenses paid trip to Boston, USA in December courtesy of the RSC and Shire Pharmaceuticals. The prize will include:

- All flights
- Three nights accommodation
- Visit to Shire Human Genetic Therapies Site
- Visit and tour around the MIT and Harvard Campus
- Tour around Boston

As Jessica Mann from Shire explains "Shire is proud to be involved in a campaign to promote careers for Chemistry school students and rewarding excellence"

For more information about this exciting competition please visit

www.rsc.org/shireprize

If that's not motivation enough for a bit of last minute cramming I don't know what is!

R. Bowler



Biochemistry- the chemistry of life

CAREERS SPOT

If you like chemistry and you also like biology and are studying them both then why not consider taking your interest further by studying biochemistry at university. Biochemistry is indeed the chemistry of life. Living cells act as tiny chemical plants taking in raw materials producing chemicals and molecules of use and then recycling or reprocessing the by products. And the great thing about biochemistry is the sheer diversity of careers opportunities available

to you once you graduate. You could be working in the pharmaceutical industry, healthcare, biotechnology or nanotechnology. In fact there's not enough space in this newsletter, or even the next 10 to explain all the jobs you could be doing. Try the biochemical society for more detailed information about some of your options here: <http://www.biochemistry.org/education/careerspdf.htm> Next month we'll tell you about the opportunities if you like chemistry and physics.

Website of the month

<http://www.physorg.com/>
This site has the latest science and technology news. Loads of it is chemistry- it's got a chemistry section but have a closer look and you'll see chemistry

cropping up in loads of other stories in other sections too. Well worth a read and great for identifying hot topics of research for the future.

chemnet events

Meet the Universities 2008

Have you had your invite in the post? Have you registered to come yet? You haven't? Well what are you waiting for? Go on register now at www.rsc.org/chemnet/mtu What?! You're still here? Go on, do it now.

You're back? Good, you won't regret it. The list of universities you can meet, sit down and have a chat with is now on the MTU website. Go there for a look and to register- remember it's free for ChemNet members. And if your parents or teacher want to come too we've got a special "Parents" room you can leave them in while you get all the info from the unis. In fact they'll have it pretty cushy with teas coffee, and even a TV. We've even got lots of parking nearby- so they can chauffeur you there!

Other upcoming events include a visit to Johnson Matthey in Royston Herts on 8th July, events in Bradford in July and Leeds and Widnes in November. We are also planning events in Sheffield and Newcastle amongst others. Watch out for your invites in the post if you live nearby.

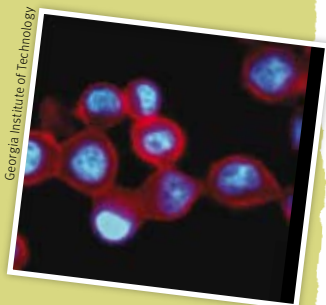
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chemistry on the web

We cover one methodology for treating cancer in the news section. If you want to learn more about these techniques and others for fighting cancer then take a look at this site:

http://nano.cancer.gov/resource_center/nano_critical.asp

It covers the use of nanotechnology in the diagnosing and treating of cancer and explains more about how the characteristics of nanotechnology

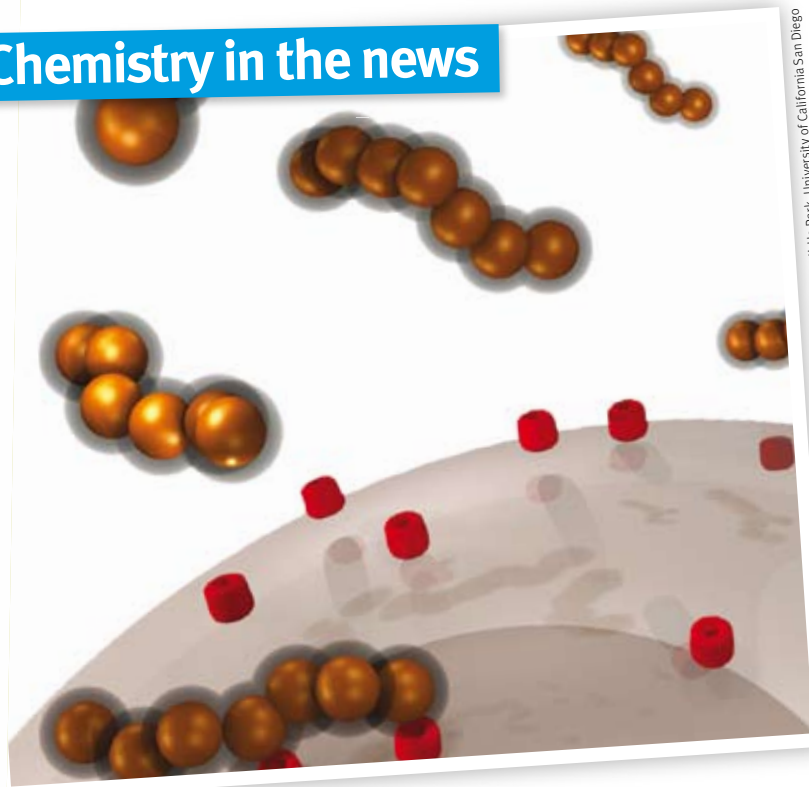


offer such a bright hope in this lifesaving application of nanotech.

If the story in the news section has piqued your interest in finding out more about polymers then have a look at this site which gives further details of polymer research groups here in the UK. <http://www.polymer.group.shef.ac.uk/links/uk.php> If you are struggling with revising polymers this resource might be useful: <http://www.rjclarkson.demon.co.uk/candrand/polymerisation.htm>

If you want to register to use the discussion board email chemnet@rsc.org

Chemistry in the news



ji-Ho Park, University of California San Diego

Iron nanoworms fight cancer. Some of you may be off to the cinema soon to see Iron Man. A man of iron to fight evil! What about a nanoworm of iron to fight cancer? It's not as daft as it sounds! Unfortunately cancer will affect many of us and those we love in our lives. But one treatment is being developed using nanotechnology in the form of "nanoworms". One of the problems with treating cancer has always been how to kill the unhealthy cancerous cells while keeping the healthy cells surrounding them in and in the rest of the body intact. Treatments such as radiotherapy or chemotherapy can be effective but often have a debilitating effect on the rest of the body. So how do you target the cancer cells with the active ingredient to kill those cells only? Enter the iron nanoworm! Segmented molecules of magnetic iron oxide coated with a polymer can now cruise through the body unfettered by the immune system and home in on tumour cells. Attach a drug molecule to them and bingo- you've got a magic bullet. More details about this great opportunity here.

<http://www.physorg.com/news129376905.html>

Everyman and his dog (OK, maybe not the dog- paws aren't that useful for handling chemicals in the lab) is looking for alternatives to produce products which are currently produced from crude oil. This story has details about the use of soya oil to create polymers which are normally created from crude oil.

<http://www.sciencedaily.com/releases/2008/05/080502170413.htm>

All very useful but worth thinking whether using food crops for manufacturing chemicals is the way forward- just look at what is happening to the price of foodstuffs as more corn is used to produce bioethanol. This is one of the factors affecting the pricing price of food. Others are discussed here: http://news.bbc.co.uk/1/hi/in_depth/world/2008/costoffood/default.stm

Initially you'd think there was no link between these stories- but look again, both of them have come about through research into biochemistry- in humans and plants. So again you can see the diversity of areas you could be working in if you study biochemistry.

“To book a place on a ChemNet event email: chemnet@rsc.org or call 01223 432340”

free stuff!



This month we have 2 more *MolyMod* chemistry kits to give away from my magical never-ending supply. *MolyMod* produce excellent molecular modelling kits- take a look at their website here: www.molymod.com

The winners of the molymod kits last month were Laura Glister from Stanley and Hannah Bolt from Exter. Well done to you both. The kits will be with you soon.

To win a *MolyMod* kit this month email the answer to this question by 10 June to chemnet@rsc.org or call 01223 432340. How many bonds can a nitrogen atom form?



HAVE YOUR SAY!

Would you like to see your article in the next issue? If it's good enough we'll print it! Submit your article to chemnet@rsc.org

CHEMISTRY FACTS

Platinum is so expensive it is priced by the ounce (28.35g). That's not a lot of anything and it will cost you about \$2000 an ounce- in 2006 it only cost about \$1000 an ounce. But the thing is, it's really useful. Amongst other things it is used for catalytic converters in cars and in alloys for use in computer hard drives. Oh and it looks quite nice as jewellery too!



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