CHARTERED CHEMIST NEWS

Newsletter of the Association of the Chemical Profession of Ontario

Summer 2009
Vol. 9, No. 2

Executive Office: 1 Yonge Street, Suite 1801
Toronto, Ontario, M5E 1W7
www.acpo.on.ca

In this issue:

President's Message

The Council of the ACPO is working quite hard to promote chemistry and our profession in several ways. In this issue of the Chartered Chemist News, I will report on a few of the things that we have done over the last few months.

2009 AGM

The ACPO held its Annual General Meeting (AGM) on Friday May 8, 2009. We were very encouraged by the larger than usual turn-out. The evening was enjoyable and our Councillors were able to meet and get feed-back from many members. Over the next year, we will be working to get members more involved with the Association and we hope for a larger turn-out in the future.

Next year our AGM will be held on Friday May 14, 2010. Please reserve that date. We encourage you to attend.

I would like to thank our guest speaker, Dr. Massimo Marcone of the University of Guelph. Dr. Marcone is a nationally and internationally recognized Food Scientist and is a well recognized media food science personality and educator in the area of food and the science behind what we eat. Dr. Marcone's talk on coffee was interesting, informative and well received.

I would also like to thank our industrial sponsors for their generosity which allowed us, once again, to provide supper at no cost to our attendees. We encourage our members to support those who sponsor us and the work we do. The names of our sponsors are listed in this newsletter and they are recognized on our web-site.

2009 Planning Meeting

The Council of the ACPO met on the weekend following our AGM to review the previous years work and to develop plans for our future activities. We have several activities that have been identified as priorities for us this year, among them are:

1. ***Membership.*** We have not moved forward as fast and as far with this activity as we had planned. This activity will be a primary focus of our Association this year. We will be contacting chemists in universities and colleges, industry, government departments, private practice to encourage them to become involved in our Association. We welcome help from our members in this activity.

2. ***Web-site.*** We will be updating and upgrading our web-site. There have been many requests for on-line payment of fees and we hope to have this service in place for 2010. 3. *Promotion of Chemistry.* We will continue to work with the Canadian Society

con't page 2

Letter from the Editor

Hello Chemists in Ontario and abroad. As you enjoy the warmer weather and some time off work we are busy working on plans to make the ACPO more relevant to its members and the general public.

It was decided at the 2009 planning meeting that we would offer 3rd and 4th year chemistry students free membership to our association as a way of attracting young people to the Industry. Therefore, I have included the list of district councilors in this issue as these are the people who will be contacting University chemistry department heads and presenting this idea. So please contact your district councilor if you can help in any way with this new initiative."

Doug Beswick, C. Chem
Editor

President's Message con't.

for Chemistry (CSC) and the National Advisory Committee on the Profession of Chemistry in Canada (NACPCC) to promote chemistry and the profession of chemistry in Canada. Our work in this area will include, among other things: harmonization and transferability (in several areas) among the various provincial professional organizations, and improving the publics perception of chemistry, chemicals, and the profession of chemistry.

CSC/NACPCC Meeting

Members of the CSC and the NACPCC met in a whole-day meeting on May 31, 2009 at the CSC conference in Hamilton. Several issues were addressed including the Agreement on Internal Trade (regarding Labour Mobility), which is scheduled to be implemented by August 2009, and the recognition of chemistry and the profession of chemistry across Canada. I will be reporting on this meeting in more detail when we (the ACPO and NACPCC) debrief in the coming weeks.

With a view of advancing these and other issues, representatives of the CSC and NACPCC, which included representatives of the existing and developing professional chemistry organizations in Alberta (ACPA), British Columbia (ACPBC), Manitoba, Nova Scotia (NSCS), Ontario (ACPO), Quebec (OCQ), and Saskatchewan, signed a Memorandum of Understanding (MOU) to work collaboratively towards the harmonization of common programs in the areas of membership requirements, codes of ethics & practice, the definition of practice, disciplinary processes, and in other areas of common interest. We also agreed to work with our educational colleagues to advance the understanding of chemistry and the profession of chemist through the educational process.

The above was motivated by our common objectives to advance the recognition and professional practice of chemistry in Canada and to facilitate labour mobility.

con't page 3

ACPO Chartered Chemist News

Published three times per year by the Association of the Chemical Profession of Ontario.
Circulation: 1,500.

EXECUTIVE OFFICE

1 Yonge Street, Suite 1801
Toronto, ON M5E 1W7
(416) 364-4609
Fax: (416) 369-0515
E-mail: info@acpo.on.ca
Web: www.acpo.on.ca

Editorial Board
Doug Beswick
Carola Serwotka
Claude Bordeleau
Ed Alvarez

Webmaster:
Claude Bordeleau

Producer
Kwik Kopy ,
London, Ontario

Summer 2009

Readers Write

The importance Chemical Oceanography

Published with permission by Gamal E. Omer Elhag-Idris, MCIC, C. Chem.

ABSTRACT

Oceanography describes the fundamental aspects of a marine ecosystem. One cannot quantify the issues facing the resources and the research in marine environment without an understanding of the chemical oceanographic processes. The importance of chemical oceanography in studying and monitoring the marine environment is discussed below.

Introduction:

Oceanography continues to grow as people realize more and more the importance of oceans (e.g. sources of food, energy, etc.). However, oceans are fragile, and their ability to absorb industrial wastes, although vast, is limited. Knowledge of the oceans through continuing research is necessary for their proper utilization. Oceanography is the scientific study of the sea and of the processes occurring in it. It embraces a range of scientific disciplines including marine biology, marine geology, marine physics, marine chemistry, marine pharmacology, and marine engineering. The Food and Agriculture Organization (FAO) and World Health Organization (WHO) of the United Nations have developed all these branches of oceanography (1, 2) (see Tables 1 and 2).

The definition of oceanography: Oceanography is the scientific study of oceans. Oceanography is a huge field and some of the areas of study include: ocean bottom geographic features (depths, volcanoes, trenches, oceanic plateaus, fracture zones, ridges and basins), plate tectonics, chemical composition of the ocean water (salt content, carbon dioxide levels, density), interaction between the ocean and the atmosphere (Coriolis effect, weather systems, hurricanes, monsoons, cyclones, El Nino, etc.), ocean climates, ocean currents, waves, tides, chemical cycling in the ocean, plankton and sediments, just to name a few. There are five oceans: the Pacific Ocean, the Atlantic Ocean, the Indian Ocean, the Arctic Ocean and the Antarctic Ocean (3).

Continental Shelf: The continental shelves are generally shallow, and have high biological activities of plant and animal. However, since no light reaches the deep ocean floor, it is completely dark. Plant life occurs sparsely, and the animals that live there have to find other sources of energy.

- **Nutrients:** In wintertime, nutrients (nitrogen, phosphorous and silicon) increase in concentration in the upper layer of the water. This happens through upwelling, i.e. the upward movement of nutrient-rich water layer from the deep parts of the ocean to the surface layer.

- **Less light** or complete darkness means that light does not penetrate down into the deep water. The changes in light conditions vary with time.

con't page 4

President's Message con't.

Of special interest at this time is the coordination of training needs and professional development, which are anticipated to include, but may not be limited to, issues such as ethics, public safety, professional responsibility, legal and regulatory requirements, quality management systems, and risk management.

The MOU is subject to ratification by the Boards/Councils of the above organizations. The Council of the ACPO ratified the MOU on Friday June 12, 2009, and we are awaiting ratification from the other organizations.

I would like to thank all members of Council for their time and efforts and I wish all members of the Association an enjoyable summer.

Dr. David Naranjit, C.Chem.
President, ACPO

Notes:

Readers Write

The importance Chemical Oceanography con't

• **Temperature**: Water is warmer in the summer.

• **Lower salinity** because of freshwater run-off from land or air surface water interaction (mixed layer).

• **Marine turbidity:** It is the reduction of water clarity due to suspended or dissolved materials in the water column.

• **Dissolved substances (DS):** Industrial processes allow DS to reach the ocean such as heavy metals, or organic matter. Oceans are becoming a dumping ground for potentially thousands of synthetic chemicals.

• **The difference between a sea and an ocean:** Seas are just extensions of an ocean. Seas can be partially or totally landlocked, e.g. the Mediterranean is a large sea that is an extension of the Atlantic Ocean. Sometimes seas can be totally landlocked within a continent such as the Caspian Sea in the middle of the former Soviet Union. Such seas have salty water.

Ocean depths: These can be determined with an echo sounder by measuring the time it takes for a sound pulse to leave the boat, reflect off the sea floor, and return to a hydrophone. Marine animals have a variety of adaptations depending on the organism that allow them to cope with pressure changes. The ocean pressure increases by one atmosphere for every 10 meters of depth. Physiological problems ·occur with diver in the deep ocean depending on depth of the dive, equipment, etc. Ocean floors vary in depth, with topographic features of mountains and valleys.

• **Primary productivity (photosynthesis):** Primary productivity is important for the growth of marine plant (or phytoplankton). Generally, nutrients increase in winter. During springtime, the high growth of plant life affects herbivorous animals in the ocean, which in turn affects all animals in the ocean food chain, including the migration of large animals, such as whales. This happens because of the change in food productivity in different latitudes at different times. Marine phytoplankton growth is limited by the available light. In the greater ocean depths, there are no plants and the animals there either eat other animals, detritus, or fallen food substances from the surfaces. In the case of hydrothermal vent communities, bacteria and chemosynthesis, rather than photosynthesis governs the food chain.

The marine environment as source of raw materials:

As the world population continue to increase, it is necessary to seek more sources of food, water and raw materials. At present, most of the exploitation of fisheries and extraction of minerals have been carried out in open sea by the more industrialized nations. However, for many nations fisheries will play a key role, both in nutrition and as a source of proteins. The seaweed, which grows prolifically in many coastal waters, is a valuable source of organic chemicals particularly for the food and pharmaceutical industries. The demand for water has begun to outstrip the natural supply from rainfall in arid countries where irrigation is essential for the expansion of agriculture, industry and drinking water. The desalination of seawater, brackish water and wastewater is the only viable solution (see Table 1).

The importance of chemical oceanography:

Chemical oceanography is very important for Canada, given the size of its coastline, the longest in the world. Studies in this field (see Table 2) can contribute to ensure for Canada a safe supply of food, fresh water, minerals, energy, and recreation. Chemical oceanography is the study of the chemical characteristics of seawater and their interaction to create a sustainable environment for normal marine life. It occupies a central position in this respect. For example, in the field of physical oceanography, our knowledge of water masses of the oceans and their origins is largely based on a measurement of chemical parameters, such as salinity

The importance Chemical Oceanography con't

Marine biologists depend on the analysis of nutrient elements, e.g. nitrogen, phosphorus and silicate to determine the fertility of the sea. Chemical oceanography studies are also important to geologists since they provide clues to the modes of formation of the peculiar manganese nodules growing on the ocean floor (3, 4, 5, 6). Chemical oceanography can also improve methods of marine pollution control. The more we know about the oceans chemistry, the better we will understand the geological, biological, physics and atmospheric and processes that operate on Earth.

There are many unanswered questions about the oceans, from which we extract directly or indirectly a lot of our food, water and other important resources. If we have a better understanding of the ocean and the things that live there, we can learn to properly manage marine resources. Chemical oceanography study can help us to develop sustainable management plans for the marine organisms and products.

Marine Pollution Chemistry:

The sea is becoming increasingly polluted as a result of human activity, either incidentally or as direct result of its use for the disposal of waste products (e.g. organic and inorganic compounds). Some water bodies, such as estuaries and fjords, and even coastal waters with more open circulation, may have limited exchange with the sea, and thus the discharge of effluents or oil would have severe effects on them (see Table 3) (7). Marine pollutants may find their way into coastal waters, and result into a great risk to people through the consumption of contaminated seafood (e.g., red algae bio-accumulated toxins, organic or inorganic compounds). Through the understanding of chemical oceanography and the contribution of other sciences, we can expect to find solutions for these problems. It can also help in devising a better plan to protect the marine environment for future generations (8, 9).

Conclusion:

This work reviews how chemical oceanography plays a central role in the understanding of oceans. This specialized chemistry field is involved in addressing many ecological and industrial issues, such as pollution control, sustainability of the marine environment, desalination, water technology, oil industry, and R&D pharmaceutical (see Tables 1, 2 and 3). Finally, chemical oceanography can contribute to Canada for future generation needs.

Author **Gamal E.O. Elhag-Idris, MCIC, C. Chem.**, is CMOS accredited consultant in chemical oceanography, pollution control and water technology. He works at Siemens Healthcare Diagnostics Ltd, Canada.
Web:
www.cmos.ca/Privatesector/companies/omer.htm

Table 1- Short summary about the importance resources of oceanography

Sources	Example
Living resources	• Food: fish, shellfish, seaweed
Non-living resources	• Minerals: offshore oil, gas, manganese nodules, sea salts, desalination for water supply • Energy: ocean waves, currents, tides, temperature and salinity gradients
Other resources	• Cooling water for industries along the coast, e.g. power plants, gas and chemical plants, refineries • Recreation • Navy

con't page 6

The importance Chemical Oceanography con't

Table 2- chemical oceanography plays a central role in oceanography studies

Chemical oceanography	Examples of study areas
Marine atmospheric chemistry	Materials transport to ocean
Marine pollution chemistry	Organic, inorganic, analytical
Marine analytical chemistry	Organic, inorganic, nutrients, sampling, analytical chemistry
Marine geochemistry	Determination of chemical speciation of marine water and sediments
Marine physical chemistry	Inorganic elements and compounds and thermodynamic approach
Marine chemical kinetic and quantum mechanical	Understanding chemical transformation via reaction mechanisms at the molecular level for organic, inorganic and biochemical reactions
General chemical oceanography	Studying physical, geological, atmospheric and biological process both natural and anthropogenic processes

Table 3- Sources of marine pollution

Sources	Comments
Domestic sewage	Pathological and toxic wastes harmful to marine organisms; may result in blooming algae
Industrial wastes	Highly toxic and complex substances may damage marine life
Shipboard wastes	Blast oil, solid waste, organic and inorganic compounds
Oil spills	Damages to fish industry, recreation, etc.
Radioactive wastes	Nuclear tests, burial of nuclear wastes
Heat water (cooling)	Harmful to zooplankton, phytoplankton
Sediments from overland runoff	Negative impact to photosynthesis process
Gas emissions CO_2, CH_4, CFC	Global warming, melting polar ice, natural disasters

References:

1. WHO (World Health Organization), web site: http://www.who.int/en/ (accessed September 13, 2008)
2. FAO (Food and Agriculture Organization), web site: http://www.fao_Hlt209035946_Hlt209035946.org/ (accessed September 13, 2008
3. Day T. (2007). Oceans, Facts on File Inc., NY, USA
4. Garrison T.S. (2007). Oceanography, an Invitation to Marine Science. 6' Edition, ISBN-10: 0495190683, Books/Cole, Thomson Learning, USA
5. Riley J.P. & Chester R. (1971). Introduction to Marine Chemistry. Academic Press, ISBN: 0125887507, London, UK.
6. Degens E.T. and Ross D.A. (1969). Hot brines and recent heavy metal deposits in the Red Sea; a geochemical and geophysical account, Springer-Verlag, NY, USA.
7. Clark R.B. (2001). Marine Pollution. 5' Edition. ISBN-10: 0198792921, Oxford University Press, UK.
8. The Integrated Ocean Drilling Program (IODP), web site: http://www.oceandrilling.org/ (accessed September 13, 2008)
9. Brewer P.G. (1983). Oceanography: The Present and Future. ISBN: 3-540-90720-3, Springer-Verlag, NY, USA

MOVING? MOVED?

Members, Please ensure that you send us your new mailing address and other contact information if you have moved recently.

You may send the information to our head office address, or you may contact us by visiting our web-site: www.acpo.on.ca

2009 Planning Meeting

The Council of the ACPO met on the weekend following our AGM to review the previous years work and to develop plans for our future activities. We have several activities that have been identified as priorities for us this year, among them are:

1. *Membership.* We have not moved forward as fast and as far with this activity as we had planned. This activity will be a primary focus of our Association this year. We will be contacting chemists in universities and colleges, industry, government departments, private practice to encourage them to become involved in our Association. We welcome help from our members in this activity.

2. *Web-site.* We will be updating and upgrading our web-site. There have been many requests for on-line payment of fees and we hope to have this service in place for 2010. 3. *Promotion of Chemistry.* We will continue to work with the Canadian Society for Chemistry (CSC) and the National Advisory Committee on the Profession of Chemistry in Canada (NACPCC) to promote chemistry and the profession of chemistry in Canada. Our work in this area will include, among other things: harmonization and transferability (in several areas) among the various provincial professional organizations, and improving the publics perception of chemistry, chemicals, and the profession of chemistry.

CSC/NACPCC Meeting

Members of the CSC and the NACPCC met in a whole-day meeting on May 31, 2009 at the CSC conference in Hamilton. Several issues were addressed including the Agreement on Internal Trade (regarding Labour Mobility), which is scheduled to be implemented by August 2009, and the recognition of chemistry and the profession of chemistry across Canada. I will be reporting on this meeting in more detail when we (the ACPO and NACPCC) debrief in the coming weeks.

With a view of advancing these and other issues, representatives of the CSC and NACPCC, which included representatives of the existing and developing professional chemistry organizations in Alberta (ACPA), British Columbia (ACPBC), Manitoba, Nova Scotia (NSCS), Ontario (ACPO), Quebec (OCQ), and Saskatchewan, signed a Memorandum of Understanding (MOU) to work collaboratively towards the harmonization of common programs in the areas of membership requirements, codes of ethics & practice, the definition of practice, disciplinary processes, and in other areas of common interest. We also agreed to work with our educational colleagues to advance the understanding of chemistry and the profession of chemist through the educational process.

con't page 8

CSC/NACPCC Meeting con't

The previous was motivated by our common objectives to advance the recognition and professional practice of chemistry in Canada and to facilitate labour mobility.

Of special interest at this time is the coordination of training needs and professional development, which are anticipated to include, but may not be limited to, issues such as ethics, public safety, professional responsibility, legal and regulatory requirements, quality management systems, and risk management.

The MOU is subject to ratification by the Boards/Councils of the above organizations. The Council of the ACPO ratified the MOU on Friday June 12, 2009, and we are awaiting ratification from the other organizations.

I would like to thank all members of Council for their time and efforts and I wish all members of the Association an enjoyable summer.

Dr. David Naranjit, C.Chem.
President, ACPO

POSITION	POSITION
President D. Naranjit, C. Chem.	**Past President** C. Bordeleau, C. Chem.
Vice-president vacant	**Treasurer** C. Serwotka, C. Chem.
Secretary R. Marion, C. Chem.	**Registrar** E. Alvarez, C. Chem.
Chair - Board of Examiners J.G. Breau, C. Chem.	**Publications Editor** D. Beswick, C. Chem.
Chair - Discipline Committee E. Alvarez, C. Chem.	**Chair - Public Affairs & Communications** vacant
Chair - Licensure Committee E. Alvarez, C. Chem. (*interim*)	**Chair - Marketing & Publicity** vacant
Chair - Environment Committee R. Johnson, C. Chem.	**CSC Liaison** T.W. Obal, C. Chem.

District 1 - Kingston, Cornwall R. Johnson, C. Chem.	**District 8 - Oakville, Burlington** S.C. Mojumdar, C. Chem.
District 2 - Ottawa O. Ekewenu, C. Chem.	**District 9 - Wellington, Waterloo** C.F. Serwotka, C. Chem.
District 3 - Belleville, Peterborough C. Sullivan, C. Chem.	**District 10 - London, Windsor** D. Beswick, C. Chem.
District 4 - Northern Ontario J.G. Breau, C. Chem. (*interim*)	**District 11 - Sarnia** R. Johnson, C. Chem.
District 5 - Scarborough, Oshawa K. Zahoor, C. Chem.	**District 12 - Outside Ontario** L. Cretu Enache, C. Chem.
District 6 - Toronto, North York J.D. Lock, C. Chem.	**District 13 - Etobicoke, York** D. Prashad, C. Chem.
District 7 - Brampton, Mississauga T.W. Obal, C. Chem.	**District 14 - Hamilton**

RSC swallows a spider

by David Bradley, Science Journalist

Chemspider.com, the chemicals search site, has been acquired by the Royal Society of Chemistry (RSC). ChemSpider is a free database of almost 21.5 million unique chemical structures sourced from over 200 different data sources, including PubChem, and integrates this information with other services. The RSC says its acquisition complements its work on semantic mark-up technology for chemistry and the release of the InChI chemical structure resolver, which was developed in partnership with ChemSpider.

"What originally started as a hobby project to give back something to the chemistry community has become one of the primary internet resources for Chemistry," says Chemspider founder Tony Williams. An RSC news release explains that, the "RSC has acquired ChemSpider to fulfil its strategic objective of disseminating knowledge to the chemical community and advancing the chemical sciences."

Source:
http://rsc.org/AboutUs/News/PressReleases/2009/ChemSpider.asp

Notes:

Cancer drugs wipes fingerprints

by David Bradley, Science Journalist

U.S. immigration officials held a cancer patient for four hours before they allowed him to enter the country because he had no fingerprints.

Chemotherapy drug capecitabine, Xeloda, is an anti-metabolite drug that can help prevent a relapse of the cancer, but it has several unfortunate side effects including peeling of the skin on the hands and feet. Hand-foot syndrome causes chronic inflammation of the palms of the hands and soles of the feet and the skin can peel, bleed and develop ulcers or blisters. This can eventually eradicate one's fingerprints.

The missing fingerprints incident is highlighted in a letter to the cancer journal, Annals of Oncology, published online today. According to the oncologist involved, several other cancer patients have reported loss of fingerprints, and some have also commented on facing similar problems when traveling to the USA.

Immigration officials and oncologists are now advising all cancer patients being treated with this common drug to carry a doctor's letter with them if they want to travel to the USA.

It is uncertain when the onset of fingerprint loss will take place in susceptible patients who are taking capecitabine. The 62-year old patient highlighted in the journal was unaware that he'd lost his fingerprints until

immigration officials attempted to match his dabs against their database to check he was not a criminal or travelling on false documents.

Source:
http://www.sciscoop.com/immigration-cancer-and-missing-fingerprints.html

Industry News

WASHINGTON, D.C. – For the 14th year, the U.S. Environmental Protection Agency (EPA) is recognizing chemical technologies developed by leading researchers and industrial innovators who are making significant contributions to pollution prevention in the United States. The Presidential Green Chemistry Challenge Awards are given in five categories: Academic, Small Business, Greener Synthetic Pathways, Greener Reaction Conditions and Designing Greener Chemicals.

The 2009 Award winners are: Professor Krzysztof Matyjaszewski, Carnegie Mellon University, Pittsburgh, PA; Virent Energy Systems Inc., Madison, WI; Eastman Chemical Co., Kingsport, TN; CEM Corp., Matthews, NC; and Procter & Gamble Co., Cincinnati, OH, jointly with Cook Composites and Polymers Co., North Kansas City, MO.

EPA's Presidential Green Chemistry Challenge promotes research and development of less-hazardous alternatives to existing technologies that reduce or eliminate waste, particularly hazardous waste, in industrial production. An independent panel of technical experts convened by the American Chemical Society selected the winners from nearly 100 nominated technologies. Over the past 14 years, awardees' work has led to the elimination of more than 1.3 billion pounds of hazardous chemicals and solvents, nearly 43 billion gallons of water, and about 450 million pounds of carbon dioxide. These benefits are in addition to significant energy and cost savings by the winners and their customers.

Cook Composites and Polymers Co. and Procter & Gamble Chemicals received the award for Chempol® MPS technology, which was developed and commercialized through collaborative efforts.

Chempol MPS is a Sefose®-based alkyd resin technology that enables formulation of paints and coatings with significantly less VOCs than traditional solvent-borne alkyd coatings. Chempol MPS alkyd resins are specially formulated to perform similarly to petroleum-based polymers while delivering both an improved environmental profile and an enhanced consumer usage experience.

Growth of Biocides Used in Disinfectants and Sanitizers Exceeded Growth of Specialty Biocides in the United States in 2008

LITTLE FALLS, N.J., June 15 /PRNewswire/ -- Average growth of specialty biocides used in disinfectants and sanitizers in household, industrial, and institutional cleaners was 2.9% in 2008, which exceeded growth of the overall biocide industry in the United States downplayed due to recession to 1%, according to the latest research **Specialty Biocides 2008: A Global Series of Regional Market Analyses**. from worldwide consulting and research firm **Kline & Company**.

In 2008, the U.S. specialty biocide market was just under $2.0 billion; with market volumes approaching 600 million lbs. Water treatment is the leading application group in the United States, with halogenated biocides the leading category due to significant consumption within water treatment. The household, industrial, and institutional cleaning products industry consumed around $130 million of specialty biocides in 2008.

The green trend is affecting customers of specialty biocides within the household, industrial, and institutional cleaning products sector. The importance of this trend has been acknowledged not only by such specialty companies as Method Home Products and Seventh Generation, Inc., but by major mainstream companies in the industry, signified, for example, by Clorox's launch of its new product line Green Works in January 2008, which are cleaners based on naturally derived ingredients.

con't page 11

Growth of Biocides con't

Following the green cleaning trend, environmentally friendly biocides used in disinfectants and sanitizers are being preferred to other biocide formulations. Biocides which are highlighted as being environmentally friendly are those which break down quickly to non-polluting constituents with no potential to bioaccumulate.

"Although green cleaning products only comprise a small percentage of the total household, industrial, and institutional cleaning products market, sustainability and environmental responsibility is where the industry is focused," says Anna Ibbotson, Industry Manager at Kline's Chemicals and Materials practice. "As there is currently no uniform industry definition for green, it creates a huge challenge for chemical suppliers to develop and then position their products to address this market movement."

Kline's **Specialty Biocides 2008: A Global Series of Regional Market Analyses** presents an overview of market developments and regulatory issues in each regional market and provides estimated consumption of biocides by volume and value according to end-use application, as well as a five-year outlook.

About Kline

Kline is a worldwide consulting and research firm dedicated to providing the kind of insight and knowledge that helps companies find a clear path to success. The firm has served the management consulting and market research needs of organizations in the chemicals, materials, energy, life sciences, and consumer products industries for 50 years. For more information, visit **www.KlineGroup.com**e.

For more information, contact:

Vera Sandarova
Marketing Communications
+420-222-316-282

Vera.Sandarova@klinegroup.com
SOURCE Kline & Company, Inc

Chemical Industry Has Key Role in Greenhouse Gas Reduction

ARLINGTON, VA – The American Chemistry Council (ACC) has announced the findings of a new study revealing that for every unit of greenhouse gases (GHGs) emitted by the chemical industry, society saves more than two units of GHGs through use of chemistry products and technologies. By 2030, the GHG savings-to-emissions ratio could increase to more than 4:1, provided further emissions reduction steps by industry, policymakers and other stakeholders.

McKinsey & Company, a global management consulting firm, conducted independent analyses and overall project management for the study. The Öko Institut, an independent environmental research and consulting institution in Europe, conducted a critical review of the analysis and reviewed the calculations.

The International Council of Chemical Associations (ICCA), including ACC, initiated the study to help drive further reductions in the industry's greenhouse gas emissions – via improved production processes – while encouraging the use of those chemical products that save energy and create a net emission reduction along the chemical value chain. The chemical industry is the first global industry to embark on such an initiative.

The study used a life cycle carbon dioxide-equivalent emissions analysis to assess the global chemical industry's impact on greenhouse gas emissions through the life cycle of chemical products and the applications they enable. Analyses were performed for over 100 individual chemical product applications. Emission savings were compared with all direct and indirect emissions linked to the chemical industry. Analyses spanned the major relevant products and sectors of the chemical industry and covered a representative portion of the emissions linked to the chemical industry. Finally, 2030 modeling scenarios were used to extrapolate how emissions for production and use phases may develop.

The full report is available at **www.icca-chem.org**.

Membership Requirements

A) Categories

There are three categories of membership available for the ACPO:

1) *Full Member of the ACPO*:

These are individuals who have satisfied the formal requirements of the Association and are eligible to call themselves Chartered Chemists and to use the abbreviation C. Chem. after their names;

2) *Associate of the ACPO*:

These are individuals who are working as chemists, or in chemistry-related fields, and are in the process of fulfilling the formal requirements for membership;

3) *Affiliate of the ACPO*:

These are student members currently studying chemistry, biochemistry or chemical engineering in an accredited university program.

B) Qualifications/Requirements

Individuals who possess the following academic qualifications or training and experience may be admitted as members:

1. An Honours undergraduate degree, or its equivalent from an accredited university program in Chemistry, Chemical Engineering, or the Chemical Sciences., plus **two years** of work experience acceptable to the Association. Post Graduate training will be credited as equivalent to work experience.

2. Other academic qualifications, e.g. a three-year undergraduate degree with a major in Chemistry, extensive work experience (minimum **5 years**), and a record of professional competence in the chemical field as evidenced by publications or patents.

3. Individuals who have at least **six years** of acceptable experience in the chemical field, but who do not possess the above academic qualifications, may qualify for membership by passing the Graduate Record Examination, Chemistry Section.

4. In specials cases, the Board of Examiners may present individuals to the Council for consideration based on their exceptional contributions to the science of chemistry as recognized by their peers.

acpo