Fresh

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HUMAN HEALTH | ENVIRONMENTAL HEALTH

VOLUME 32 • Monsoon Edition, 2011 | Analytical Sciences and Laboratory Services

Fresh

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WHAT'S Fresh inside...

Dear customers and readers,

We welcome new and existing readers to this issue of the 'Fresh' newsletter. The aim of 'Fresh' has been to keep customers, distributors and professionals more widely interested in the developments in analytical sciences and solutions to the new challenges; across the market segments.

With the advent of technologies in instrumentation and software the users across the industries and researchers need to update themselves to keep up with the pace of the development.

The internal and external challenges are due to changing regulations and demanding quality issues. In this issue of 'Fresh' we have incorporated these aspects related to our daily life and chemicals we deal with which come from cosmetics, healthcare and consumer products.

This issue also highlights PerkinElmer's capability in the e-notebook for regulated or non-regulated industries and very popular Chem and Bio office products for every industrial and academic researcher. There are a variety of useful software and data base available from Cambridgesoft which is recently acquired by PerkinElmer.

PerkinElmer's initiatives of talent academy along with the new product arrivals to meet the changing analytical demands are featured in this edition.

We salute our nation on the 64th Independence Day which falls on 15th of August 2011.

We trust you will find a number of items that will prove of interest to you in this new format.

Enjoy reading,

Team Marketing
PerkinElmer (India) Pvt. Ltd.

How safe is your toothpaste?

Monitoring chemical safety in consumer products

Many chemical substances are essential in small amounts for the human body to function, but larger amounts can become harmful. Even water and oxygen can be lethal to people if they are exposed to excessive amounts. While many people believe that naturally occurring substances are safer than synthetic chemicals, some naturally occurring chemicals are very poisonous.

Modern society uses tens of thousands of chemicals in everyday products. Alcohol, cosmetics, household adhesives and cleaning products, insect sprays, paints, petrol, weed killers, foods and medicines are just a few examples. Although many common products contain chemicals that can be harmful if used incorrectly, consumers generally understand and accept the risks and benefits of using these products.

Food is the very sustenance of life for humans. Perhaps no body structures are more crucial to human consumption of food than our teeth. The teeth serve to break up larger pieces of food into smaller, more digestible bits that our bodies can use. Teeth are always subject to decay from the various food particles that are constantly brushed against them, occasionally left undetected there for several hours. Humankind invented toothpaste for a variety of reasons, the most important of which is the prevention of this tooth decay. Others include the freshening of breath, and the whitening or strengthening of the teeth. Usually, we, the buying public, do not see this product until it is in its familiar plastic tubing at the supermarket, complete with an easy-to-read (usu-

ally) label and brand name conveniently on the front. The oral care products are being used by everyone in various forms like mouth wash or toothpastes. Many companies with great brands campaign for the best results to the human being and statistics show the improvement in the oral hygiene.

In making of some toothpaste the common ingredient used is Diethylene glycol (DEG) also known as "diglycol", is a poisonous chemical used as antifreeze and as a solvent. DEG has many properties that perform similarly to glycerin, but DEG is not a safe ingredient for toothpaste. Diethylene glycol is also illegally used as counterfeit glycerin in some nations and sold internationally as a component of cough syrup, toothpaste, and mouthwash.

DEG is a water soluble, clear syrupy liquid. It is almost completely absorbed following ingestion. The effects of DEG have been best described in animals, where it exhibits low acute oral toxicity. It causes mild skin and eye irritation. Repeated, long-term oral exposure of DEG to animals causes renal (kidney) toxicity.

Potential risks of DEG in toothpaste

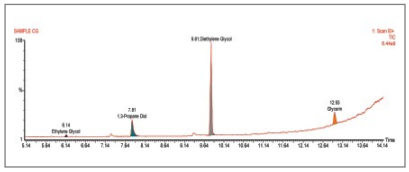
Regulatory bodies compared the toxicity data with the potential doses of DEG, based on media reports that the concentration of DEG in some toothpastes is up to 4.6%. These comparisons indicate that there is

unlikely to be concern for short-term exposures to DEG in these products. However, there is a significantly higher risk, particularly for children, from long-term exposure to these reported levels of DEG.

The U.S. CFR allows no more than 0.2% of diethylene glycol in polyethylene glycol when the latter is used as a food additive. The FDA is concerned about potential risks from chronic exposure to DEG and exposure to DEG in certain populations, such as children and individuals with kidney or liver disease. DEG in toothpaste has a low but meaningful risk of toxicity and injury to these populations. Toothpaste is not intended to be swallowed, but the agency is concerned about unintentional swallowing or ingestion of toothpaste containing DEG.

PerkinElmer has the tools and technologies to detect the DEG in the toothpaste samples. There are various methods used to identify and quantify the DEG; however the widely used procedure was developed at the Forensic Chemistry Center (FCC) to examine toothpaste for the presence of Diethylene Glycol (and a related substance of similar toxicity, Ethylene Glycol) at levels of 1 mg/g (0.1% by weight) and above.

With the expertise available at PerkinElmer technology innovation centre the exercise is very successful and is able to produce the results as desired using the FCC methodology. The Clarus® Gas Chromatograph with Mass spectrometer was used. The sample preparation and standardization procedure was as per the prescribed method. The sample ion chromatogram is shown below to illustrate the capability of the system and expertise available.



Typical TIC Chromatogram of sample

Clarus® GCMS system with Autosampler

– Umesh Talekar
Application Specialist – Chromatography
PerkinElmer India Technical Support Centre, Thane, Mumbai

For more details on applications please write to: **Marketing.India@perkinelmer.com**
For more information on products and technologies log on to: **www.perkinelmer.in**

Infrared Spectroscopy

A simple and cost effective quality testing tool for plastic industries

Importance of plastics in Human and Environmental Life

The polymers and plastics are playing major role in Human and Environmental Life. Demand of plastic devices is continuously growing up due to several advantages such as light weight, durability, non-corrosiveness, low cost etc. The industries like packaging, hospital, agriculture, and automobile are relying upon plastics due to the said advantages. However, quality of plastic products solely depends on the quality of the polymers or polymer blends used during every stage of manufacturing process. Hence, Manufacturers need to perform Quality Testing at every stage of manufacturing. This includes quality testing for raw materials i.e., virgin polymers, in-process samples, and finished product.

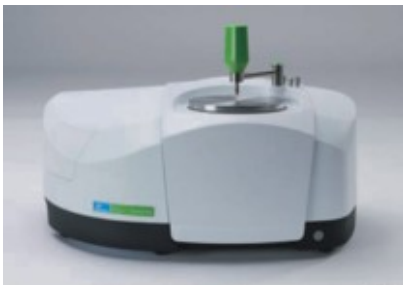
On the other hand, increasing use of the plastics in daily life has created a major environmental concern of plastic waste disposable. Plastics have strong resistance for degradation. Regulations are forcing the manufacturers for the recycling of the plastic components. Regulatory burden have made manufacturers think about the design of plastic products with the ability to recycle in mind but retain desirable properties. Also, to meet the quality specification, the recycled plastic material must compete to the material synthesized from the virgin polymers. Plastic Recycling requires segregation of the materials based on the type of the polymers present in the material. Other measures for plastic waste management include use of biodegradable plastics, disposable in landfills.

Quality Testing is necessary considering benefits as well as environmental concerns of plastic products. Several industries are benefitted by Mid Infrared Spectroscopy as a quality testing tool for polymers and plastics during manufacturing new products as well as sorting processes in recycling industries. The technology offers wide applications depending on the type of industry and the analysis needs. The analysis has become easy, rapid and cost effective due to user friendly instrumentation, sampling accessories, software, and application solutions.

Industry concerns and need of quality testing

Automotive industries use plastics in many devices such as bumper systems, seats, airbags, electrical cables etc. The major advantages of using

plastic in automotive industries are Light weight and durability. This reduces manufacturing cost and fuel consumption. These devices are hard, irregular shaped, visually appears same but are made up of different polymers. The IR spectrum of hard and irregular shaped polymer granules can be easily obtained using advanced sampling accessory called as Attenuated Total Reflectance abbreviated as ATR. No sample preparation is required and spectrum can be generated within few seconds.



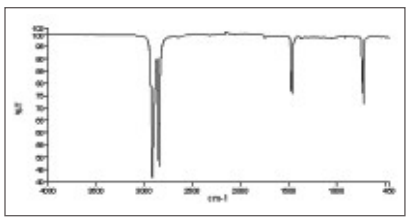


Figure 1: PerkinElmer SpectrumTwo™ FTIR with ATR and Mid IR spectrum of polymer sample (LDPE)

Entire spectrum is full of information. The absorption band position indicates the presence of specific functional group which is characteristic of specific polymer resin. Hence, IR Spectra is different for different polymer resins. Although it is quite easy to read such spectral information, it requires prior knowledge of spectral interpretation. The use of spectral libraries helps in identification of unknown materials. One can easily identify the unknown material with the help of spectral library. The search hit index helps identifying the closely matched component. The library reference spectrum which matches closely to the sample spectrum indicates the presence of the same component.

One more industrial challenge is to identify the presence of very thin layer of coating on materials. ATR is an ideal tool for such analysis. For example, UV protective coating on vehicle headlight glass.

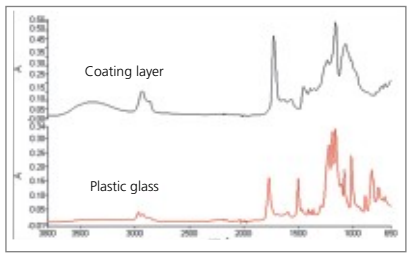


Figure 2: Automotive Plastic glass with coating. Spectral difference can be easily seen from IR spectra of inner and outer side of the plastic headlight glass.

Mixture or composite analysis is another critical application. The performance of the auto-components depends on the quality of the polymers or polymer blends. The plastic made up of two or more polymer materials yields better performance than the single polymer. The spectra of plastic mixture are more complex to interpret. In such cases the sample spectrum needs to be searched for multiple components.

A systematic approach is required for such analysis. Advanced software features can help to identify presence of multiple components.

Industries like Food and Pharmaceutical use plastics for packaging purposes. The identification test of these packaging materials is carried out by infrared spectroscopy. Sample spectrum is compared against corresponding reference spectrum. Pharmacopoeia bodies supply reference standards for these packaging materials. The software features helps in comparing sample spectrum with spectrum of reference standard. A correlation near to 1 indicates sample is closely matching the reference spectrum.

IR spectra of both sample and corresponding reference standard needs to measured using similar parameters.

In case the accessories like ATR are not available, good quality IR spectrum can be obtained using film casting technique and with simple transmission measurements. Sample needs to dissolve in volatile organic solvent. One or two drops can be

placed on IR transmitting window. The solution then evaporated off to form a thin film.

Plastic Recycling

Plastic Recycling has significant economic benefits. It prevents emissions of many greenhouse gases, reduces pollutants, saves energy, conserves resources, and reduces the need for new landfills. In order to recycle plastic into useable resins with the desired characteristics, a pure stream of resin categorized waste must be achieved. Industries which use recycled materials as a part of final product need to establish databases to identify what kinds of plastics are used in what parts of the final product. But, Industries face challenges of making recycling programs cost-effective. The labor cost to recover the materials in usable form is quite high, making it unlikely that recycled stock can compete with the price of virgin stock. To make cost effective manual sorting of plastics by inexpensive labors, the Society of the Plastics Industry instituted a voluntary labeling system. The system created a set of codes (Figure 3) for each of the six most commonly used resin types. Even with this labeling system, it is still difficult to manually distinguish polymer types due to the condition of the plastics as they reach the separation facility.

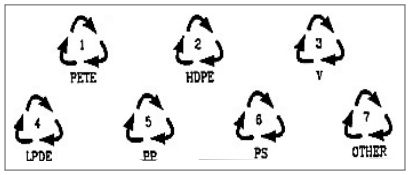


Figure 3: Plastics labeling system for plastic identification

Still the method is less efficient as overall cost goes up due to availability of labor, time required for sorting etc. Industries need to ensure the consistent and stable flow of plastic scrap, as retired automobiles vary greatly in the level and type of plastic content. This makes it difficult to establish end markets. Other economic barriers to successful recycling include the costs of transportation and recovery. The properties like composition, degree of degradation and presence of additives are necessary to ensure the applicability of recyclates for the manufacture of new products. IR spectrometer plays can screen the plastic items into different categories based on type of polymer present. The most significant advantage of using spectroscopy is the speed of identification. The speed also provides for increased volume of plastics sorted in smaller amounts of time. A second advantage is the lack of specimen preparation. With user friendly IR spectrometer, analysis can be performed anywhere, anytime and by anybody. Refer site picture.

Application Packs

Considering every aspect of industrial process, application packs can provide complete industry specific analytical solution. The ultimate goal of the pack is to extract information from good quality data and convert the information into knowledge. The need of fast, reliable, and cost effective analytical methods for Identification, Screening, and Process Control is growing for better Human and Environmental Health. Spectroscopic techniques can meet these demands. Major industrial challenges like Identification of real sample versus duplicate, Identification of multiple components present in sample, differentiating samples with same appearance etc. can be easily worked out using this technique.

– **Aniruddha D Pisal**
Global Application Specialist,
Molecular Spectroscopy

The determination of metals in cosmetics

Cosmetics of one form or another has been used since the beginning of time. The items defined as cosmetics are articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body or any part thereof for cleansing, beautifying, promoting attractiveness, or altering the appearance, and or. Articles intended for use as a component of any such articles; except that such term shall not include soap.

The Heavy metal toxicity to the humans & animals is the result of long term low or high level exposure to pollutants common in our environment including in air we breathe, water, food & numerous consumer products like cosmetics & toiletries. Exposure to toxic metals is associated with many chronic diseases. Recent research has found that even low levels of lead, mercury, cadmium, aluminum & arsenic can cause a wide variety of health problems. According to a latest finding, many cosmetics have enough heavy metals & toxins in them to impact the health of regular users.

Following elements present in lip stick, shampoo and hair colour show that how dangerous could be the use of cosmetics with chemicals.

Arsenic

1. Causes nausea, vomiting, diarrhoea
2. Decreases production of white blood cells & red blood cells
3. Causes abnormal heart rhythm, blood vessel damage
4. Irritation, inflammation, ulceration of mucous membranes

Copper

1. Physical & mental fatigue
2. Schizophrenia, depression, mood swings, sleep disorders
3. Arthritis
4. Increased risk of infections.
5. Nausea & vomiting

Nickel, Cobalt and chromium

1. Asthma
2. Nausea, vomiting & diarrhoea
3. Oxidative stress
4. Eye irritation
5. Neck tissue damage

How toxic heavy metals get into makeup and cosmetics

These metals are not put there intentionally; they are simply impurities in the product and are not required to be listed on the labels, since they are not a directly-added ingredient. Manufacturers could, and should, take care to remove these impurities, but time is money and since guidelines are so laid-back, very few manufacturers remove these heavy metals from the final product.

Health hazards caused by toxic metal build-up in body

Heavy metals accumulate in the body over a time, cause a variety of health concerns including: cancer; reproductive and developmental issues; neurological disorders; loss of memory; mood swings; joint and muscle problems; problems with cardiovascular, skeletal, blood, immune system, kidney and renal systems; headaches; vomiting, nausea, diarrhea; lung damage; dermatitis; brittle hair and hair loss.

Heavy metals are also considered to be endocrine disruptors which disrupt your normal regulation of hormonal levels. They are also suspec-ted to be respiratory toxins and there are no known "safe" blood levels.

The U.S. FDA has not regulated metals in cosmetics except in the case that zirconium is prohibited in aerosol preparations and mercury can only be used (generally as a preservative) when no other alternative is possible. They do have the authority to protect consumers against contamination deemed to be deleterious to health. Proposition 65 in California requires notice when concentrations in a product may cause exposure to hazardous components exceeding a prudent level. A letter from the Attorney General of the State of California discusses the level of concern and calculates that based on documen-ted lipstick use, a concentration of 5 mg/kg would be the level of concern requiring listing.

Examining the notices of recall in the U.S. for products manufactured in various parts of the world show that a number of items which have been recalled are cosmetics. For example, skin whitening cream from several Caribbean countries was put on an import alert because the level of mercury measured in the product was 8%. Another alert was issued for eye colors including Kohl, Kajal, or Surma. In addition to being an unapproved coloring agent, the material was found to contain lead (Pb). There has also been recent concern about lead in lipstick, uncovered through testing. The U.S. FDA has not recalled lipstick and states they will do further testing. The guidance mentioned for lead relates to the limited guidance available for food, where a letter stating that 0.1 mg/kg of Pb in candy is the maximum tolerable limit for acceptable children's exposure.

Based on candy guidance in the U.S. and the limits set in Canada, either graphite furnace atomic absorption (GFAA), inductively coupled plasma optical emission spectroscopy (ICP-OES), or inductively coupled plasma mass spectrometry (ICP-MS) would be appropriate, based on the amount of sample taken for digestion and the final volume of solution.

PerkinElmer ICPMS is the best tool available for the variety of applications and analysis to be performed for the heavy metals impurities in commercially available cosmetics like nail paints, skin creams and lip sticks. Even the toxic elements like Mercury and Arsenic also can be analyzed with good sample preparation using Multiwave 3000 microwave digestion system.

Figure 1. A variety of commercially – available lipsticks were analyzed.

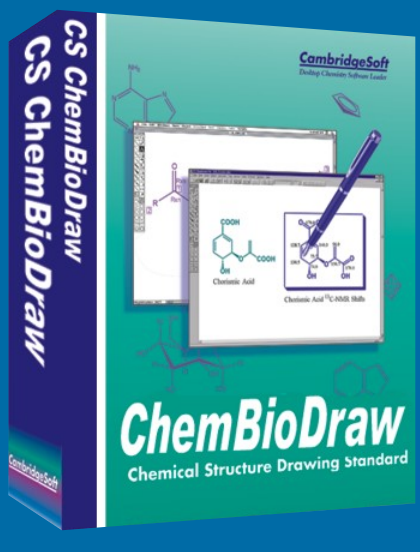
Figure 2. Lipstick was weighed prior to microwave digestion.

New NexION® 300 ICPMS and SMS 100 are the new instrumentation wonders for these kind of analysis where you can rely on technology and expertise from PerkinElmer. For more details on analysis, digestion procedure and results meeting the prescribed limits of heavy metals detection please log on to www.perkinelmer.in or write to Marketing.India@perkinelmer.com

– **Zoe Grosser, Ph.D., Lee Davidowski, Ph.D., Laura Thompson**
PerkinElmer, Inc. Shelton CT 06484 USA

Announcing Cambridge Soft from PerkinElmer

A New Informatics Platform for Enhanced Productivity

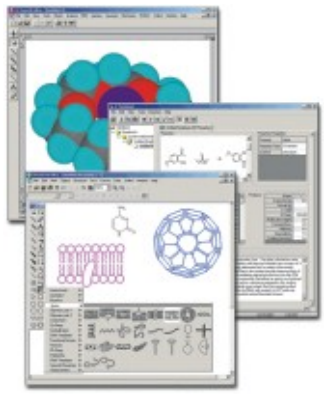


We are pleased to announce that CambridgeSoft has been acquired by PerkinElmer. With this news, we want to reiterate our commitment to delivering complete integrated systems that help our customers improve the management and interpretation of the vast amounts of data their research scientists and laboratories generate every day. CambridgeSoft from PerkinElmer will provide the informatics platform which enables customers to conduct collaborative science globally within, and between, organizations - increasing laboratory efficiency, reducing reporting times, and turning today's knowledge into tomorrow's breakthroughs.

The CambridgeSoft from PerkinElmer Informatics platform delivers market leading products in both desktop and enterprise-wide software and provides innovative technology that enables enhanced access to scientific knowledge.

This new platform combined with PerkinElmer's existing offerings, particularly OneSource® laboratory asset management services, makes the union uniquely qualified to enable highly efficient laboratory environments and increased scientific productivity.

- Desktop software includes the world-famous ChemDraw and ChemBioDraw range of structure tools while ChemBioOffice includes the world's leading ELN (Electronic Laboratory Notebook) E-Notebook, and additional modules for Inventory Management, Registration and Formulations management.
- Ensemble integrates disparate data from customers' legacy ELN, informatics systems and databases, maximizing the value of an organization's scientific intellectual capital.
- Labworks LIMS manages more than data. It also manages time, resources, and risk. In the end, it isn't about data management - it's about results.



We are excited about the prospects ahead as we blend the considerable talents and technology of CambridgeSoft and PerkinElmer. Our focus remains on providing solutions to offer customers technology, services and support that improve the

quality of people's lives worldwide. We take pride in what we do and we hope you will share our enthusiasm about this union and, for the expanded opportunities we envision it will offer.

Historically, electronic laboratory notebooks have been designed to accommodate research laboratories. Little, if any, consideration has been given to the needs of QA/QC labs. However, the requirements of QA/QC labs are significantly different from research labs. This article will discuss these differences and identify the requirements of an ELN for the QA/QC lab.

R&D Requirements

The traditional view of an ELN is that it is an R&D tool. It provides three main functions to the R&D lab:

- A means to document and protect intellectual property and meet legal requirements for patenting new discoveries
- Documentation throughout the discovery process to meet regulatory requirements
- A collaboration platform so that scientists can share their research with their colleagues

In an R&D environment the ideal ELN is one that provides the most flexibility and freedom for the researcher – a blank page that allows the researcher to do anything that they would in a paper notebook. The researcher should be able to record data, make observations, describe procedures and include images, drawings and diagrams.

All information related to their research should be stored electronically in a format that allows for easy retrieval and sharing with other researchers. The format also needs to be flexible enough to adapt to changing requirements as the research program moves through successive stages.

QA/QC Requirements

The requirements for an ELN are quite different in a QA/QC environment. Quality Departments typically conduct routine tests. They, therefore, need a structured environment to ensure that they conduct these tests the same way every time. To do this they use worksheets and/or Standard Operating Procedures to help guide the analysts through the testing process.

An ELN for the QA/QC lab should create an electronic version of your existing worksheet. An ELN should not dictate how you do business; it should just help you to get it done more efficiently and effectively.

The freedom and flexibility that is found in the R&D lab gives way to the need in the QA/QC lab to control the information that is recorded, in order to ensure that it provides a consistent and accurate base for monitoring production quality. This requires a more structured environment for data collection that ensures analysts adhere to established SOPs laid out in the worksheet.

Once the worksheet is completed it typically needs to be approved and in many cases that approval process is multi-layered. An ELN can help to manage and expedite that approval process to ensure it is followed and completed without anyone having to track down a paper worksheet.

The data that is collected in the QA lab must be available to existing systems such as Laboratory Information Management Systems (LIMS), Process Information Management Systems (PIMS), and Enterprise Resource Planning (ERP) systems such as SAP. All of this must be accomplished in an environment that fully meets the laboratory and regulatory security requirements.

Based on the requirements we have identified for the R&D lab versus the QA/QC lab it is easy to see why a traditional ELN that has been developed for an R&D lab does not satisfy the needs of a QA/QC lab. The remainder of this article will focus on providing an overview of how an ELN can be designed to accommodate the needs of the Quality Department.

Not only should an ELN be able to store data in existing storage systems, it should also use them as a source of information that is critical to the SOPs.

A structured environment for data collection

The starting point for creating a structured environment for data collection is to eliminate manual transcription of data. Automatically collecting data directly from the instruments ensures that the data generated by the samples is the data that is recorded in the ELN. There is no room in the QA/QC lab for inaccurate or inconsistent data that is the result of manual data collection and entry errors.

An ELN that automatically collects data directly from your instruments provides many benefits:

- Eliminate manual data entry
- Reduce transcription errors
- Automate calculations
- Ensure data falls within specified limits

Automate and control the SOP

In a QA/QC lab Standard Operating Procedures are developed to ensure the accuracy and consistency of sample data. It is essential that these procedures be followed exactly, for each and every analysis. If a sample result is out of range the lab knows that it is because of something in the sample and not in the way it was analyzed.

Ensuring that an SOP is being followed means monitoring and controlling all the parameters involved in the analysis including:

- Ensuring the appropriate instrumentation is being used to conduct the test
- Ensuring instrumentation has been properly calibrated
- Verifying the analyst is qualified to conduct the test
- Controlling the execution of each specific step of the procedure

Automating the worksheet ensures full control and documentation of every aspect of the analysis.

Integrate with existing systems

For many QA/QC laboratories, being able to store data in the ELN would be a duplication of the capabilities they currently have with their existing storage facilities.

If a laboratory already has a LIMS, ERP or other data management system, it makes sense to use these applications to store the data collected by the ELN. An ELN that can integrate with these systems will provide the most effective and productive use of existing resources.

Not only should an ELN be able to store data in these systems, the ELN should also use them as a source of information that is critical to the SOP. The ELN can query a LIMS for a worklist of samples that need to be run, or automatically look up calibration records for the instrument that is being used, or even check sample results against a table of limits for the analysis that is being run.

The ability to interact with a wide variety of existing systems and to fully incorporate those systems into the automation of the SOP leverages your current investment in technologies.

Meet security requirements

Data security and regulatory compliance are important issues for any QA/QC laboratory. Put quite simply, data that is captured electronically must be protected from any possible means of corruption at any point in the creation, collection and reporting system.

Password protection, electronic signatures, audit trails and archiving are all components that can be implemented to provide the level of security that meets regulatory compliance requirements.

An ELN for the QA/QC Lab

This article has discussed how the requirements for an ELN in a quality environment are quite different than those in R&D. QA/QC labs have routine tests that they conduct using standard worksheets. An ELN needs to automate those existing worksheets to make it easy for analysts to use.

In the QA/QC lab, the need for freedom and flexibility found in the R&D lab is replaced by a need for structure and control.

An ELN that uses instrument interfacing and SOP and approval process management as its core components can meet QA/QC laboratory requirements in a way that is unmatched by any other solution. This solution allows the laboratory to create a secure, structured data collection and information management environment that is based on their established practices and procedures and is fully integrated with their existing information management systems.

– **Steve Bolton**
Marketing Specialist, PerkinElmer

For more details log on
http://www.cambridgesoft.com/
Send your enquiries to
Marketing.India@perkinelmer.com

New arrivals from PerkinElmer

AxION™ 2 TOF MS

We crossed the threshold level and entered next level with new LCMS family member AxION™ 2 TOF Mass spectrometer. By offering unsurpassed sample insight, the AxION™ 2 TOF (Time-of-Flight) Mass Spectrometer is the ultimate system for identifying and quantifying compounds to better characterize samples.

No matter what your application or matrix, the instrument delivers the speed, sensitivity, exact mass information, wide dynamic range and mass accuracy you need for complete confidence in your results. Powerful 3-D quantitation and full post-processing capabilities on all masses let you minimize false positives and negatives for enhanced productivity.

The system's impressive resolution and exceptional mass accuracy minimize potential interferences, and its five orders of linear dynamic range allow you to use isotope ratios for further structural identification. The wide dynamic range allows for quantitation across a broad range of concentrations.

Some of the key features are as below –

- Adjustable dual-probe ion source can be fine-tuned to optimize sensitivity and delivers
- Simultaneous spray for advanced internal calibration
- Proprietary Trap and Pulse technology increases sensitivity 3-5 times
- V-shaped flight path maximizes ion transmission for superior sensitivity
- High acquisition speed allows for fast chromatography
- Choice of software packages tailored to specific applications and workflows

"In designing our new AxION™ MS platform, our goal was to provide our customers the highest levels of confidence in their results to protect the environmental & human health. AxION™ 2 TOF MS delivers unambiguous determination of complex molecules across a wide dynamic range. This brings highly specific, fast & accurate quantification to quality control & research-based organizations that can ultimately deliver better quality products and services to consumers across the environmental, food & pharmaceutical sectors." Said Dusty Tenney-President LS-PerkinElmer USA.

The new AxION™ Separation Probe is an innovative accessory that brings chromatographic separation directly over the Mass Spectrometer ion source probe. The combination of the AxION™ Separation Probe design with the SPP column technology, delivers an unsurpassed level of chromatographic efficiency in LC/MS applications.

Proprietary trap and pulse technology

Maximizes sensitivity by collecting dense packets of ions before accelerating them into the flight tube. The duty cycle of the pulser is perfectly synchronized with the arrival of the ion packets to ensure maximum ion transport to the state-of-the-art detector.

The AxION™ 2 TOF MS can be equipped with a variety of specialized software packages to simplify everything from controlling your instrument to accessing, managing and reporting data. Whether you're performing compound identification, target analysis, quantitation, or simple data review, there's a robust solution designed specifically for your particular need.

New arrivals from PerkinElmer

New Optima™ 8x00 ICP Spectrometer

Continuing PerkinElmer's long history of excellence and leadership in ICP technology, the Optima™ 8x00 series carries on a tradition of offering the best resolution and linear dynamic range. More significantly, the 8x00 series delivers a level of stability and detection limits never before seen in an ICP instrument. Built around the proven design of the Optima™ platform and controlled with our industry leading, Windows 7-compatible WinLab32™ software, the 8x00 series will change the way you look at ICP-OES. The line's breakthrough performance is the result of a series of cutting-edge technologies that optimize sample introduction, enhance plasma stability, simplify method development, and dramatically reduce operating costs.

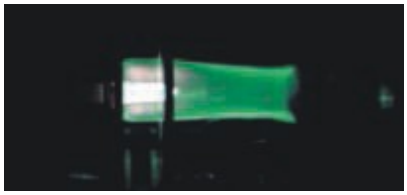
What is new with Optima™ 8x00 ICP

eNeb Sample Introduction

The most efficient and consistent sample introduction system available. By generating a constant flow of uniform droplets, the eNeb option enables Optima™ to deliver superior stability and unsurpassed detection limits – ideal for environmental and pharmaceutical labs. With PerkinElmer's patented Flat Plate™ plasma technology, the same robust, matrix-tolerant plasma is generated and maintained with almost half the argon consumption of helical load-coil systems.

Flat Plate™ Plasma Technology

A patented RF generator featuring maintenance-free plasma induction plates in place of the traditional helical load coil. With no cooling required and reduced argon consumption, operating costs are dramatically lowered.



PlasmaCam™ Viewing Camera

By offering continuous viewing of the plasma, this integrated color camera simplifies method development and enables remote diagnostic capabilities for maximum uptime. Ideal for high-throughput contract labs in food/product safety and geochemical.

Engineered to deliver proven performance

Advanced optical system ensures superior detection limits Engineered for enhanced light throughput, the optical system on Optima™ instruments delivers superior detection limits, simplifying compliance with U.S. EPA, EN and DIN regulations. Unsurpassed stability and analytical accuracy are ensured through either Dynamic Wavelength Stabilization™ (model 8000) or a thermally stabilized optical system (model 8300).

For more information log on to **www.perkinelmer.in**

Events update

Talent Academy

To fortify the Talent Management initiative in India, PerkinElmer India this year rolled out a very ambitious and unique initiative of talent development called, 'Talent Academy'. The idea behind the talent academy is to capture the young and promising fresh talent from university campus and offer them challenging growth path.

With this idea, PerkinElmer India decided to rollout with talent academy initiative to create an 'Industry – Ready' Strategic Talent Pool.

In the said academy six months robust education curriculum has been developed, comprising of class room, on the job, case study, simulation, industry visits, coupled with mentoring and coaching to the select candidates.

Talent Academy has been branded as 'PRISM – 2011' which is nothing but an inspiration from the Prism. A brilliant white light on one side of a glass prism is made up of multiple colors on the other side. Growing a business successfully is similar. There are many inputs into a business that need to be combined in a cohesive and effective way to create a clear path to success.

– **Chandan D'Cunha**
Manager Human Resources
PerkinElmer (India) Pvt. Ltd.

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