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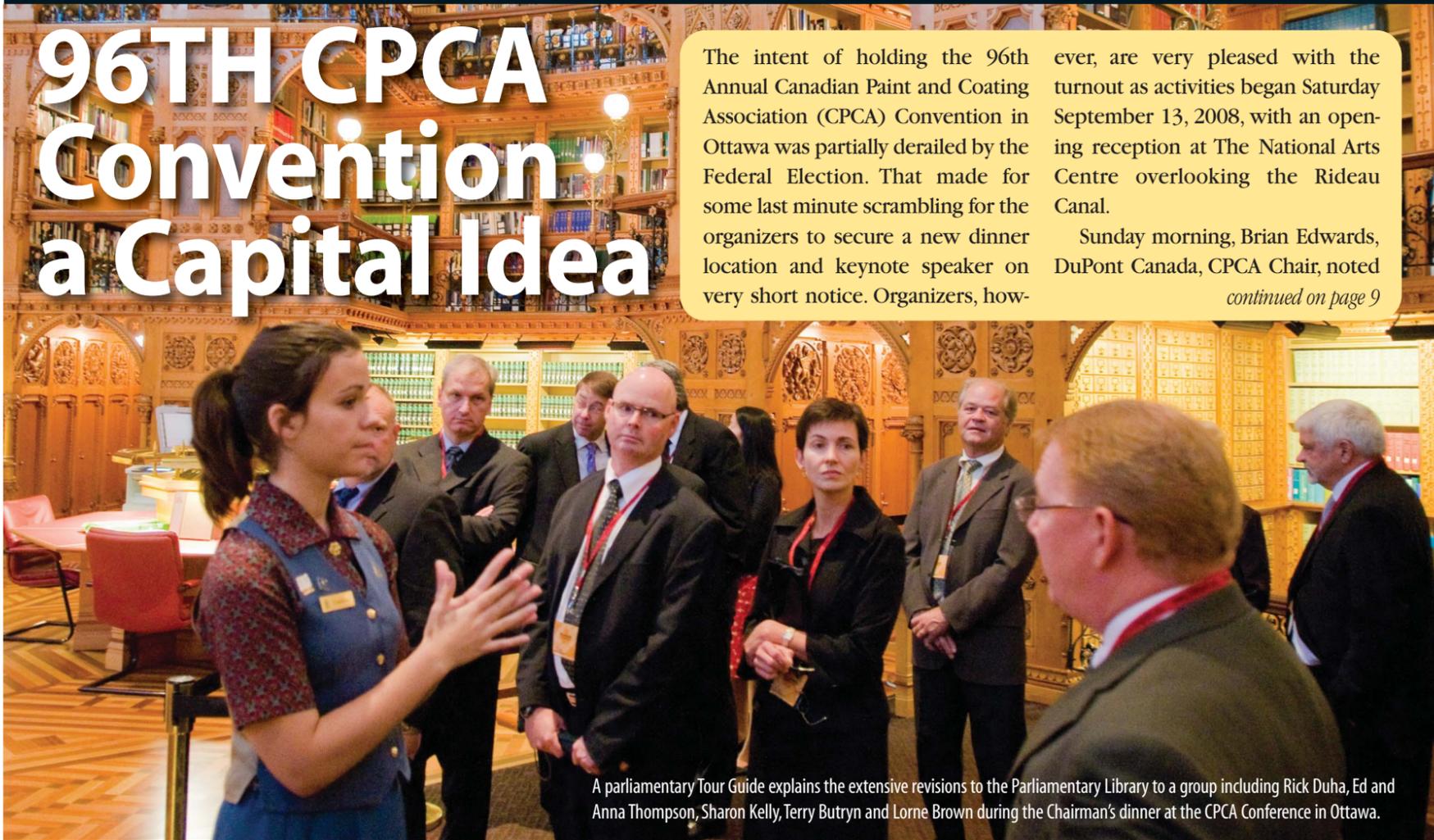
October 2008

96TH CPCA Convention: a Capital Idea

The intent of holding the 96th Annual Canadian Paint and Coating Association (CPCA) Convention in Ottawa was partially derailed by the Federal Election. That made for some last minute scrambling for the organizers to secure a new dinner location and keynote speaker on very short notice. Organizers, how-

ever, are very pleased with the turnout as activities began Saturday September 13, 2008, with an opening reception at The National Arts Centre overlooking the Rideau Canal.

Sunday morning, Brian Edwards, DuPont Canada, CPCA Chair, noted *continued on page 9*



A parliamentary Tour Guide explains the extensive revisions to the Parliamentary Library to a group including Rick Duha, Ed and Anna Thompson, Sharon Kelly, Terry Butryn and Lorne Brown during the Chairman's dinner at the CPCA Conference in Ottawa.

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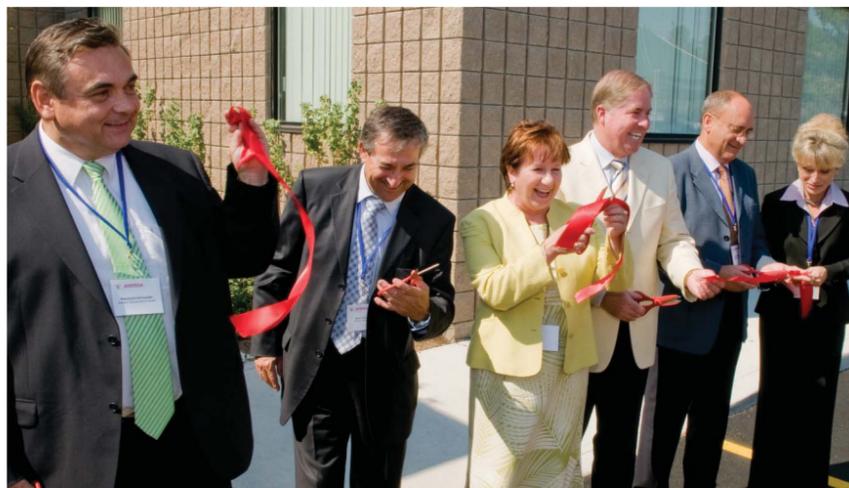
- Coatings 2008 show coverage
- Inortech Open House
- Manufacturing week coverage
- Conveyors and more
- Pigments
- Specialty Coatings
- Flat Line Finishing Systems
- Process Control
- Water Wise with John Seldon

Atotech Opens CRC TechCenter

Atotech Canada Ltd. took a large step forward in becoming the major supplier in Automotive Corrosion Resistant Coatings with the opening of their new North American CRC TechCenter in Burlington, ON September 3, 2008. The Canadian tech center joins 11 others world-wide for corrosion resistance and

decorative plating. The center includes a sample CRC plating line and a test Spin Coating system that customers from all over North America can bring their parts for testing. Fully equipped Material Science and Analytical lab facilities are available as well, for customer problem solution and process

continued on page 21



Cutting the ribbon are Reinhard Schneider, President Atotech; Gene Torcoletti, Managing Director Canada; Joyce Savoline, MPP Burlington; Cam Jackson, Mayor of Burlington; and Pablo Nieto-Aliseda, Atotech Vice President GMF assisted by Bev Farkus, Atotech.

IN THE NEWS

Company News

PPG Closes Canadian Plants

PPG Industries Inc. is closing two plants in Ontario resulting in the loss of 320 jobs. This along with other restructuring cuts, the company "hope" to save US\$100 million a year.

PPG's coatings manufacturing plant in Clarkson, ON, will be closed in the second quarter of 2009, affecting about 150 jobs.

PPG Industries' performance glazings is also stopping production in the first quarter 2009 at its Owen Sound, ON, glass manufacturing facility, which employs approximately 170 people. The company cited weakness in the North American residential construction market that is affecting glass suppliers.

The company will also close operations at Geldermalsen in the Netherlands in next year's third quarter.

The restructuring is part of PPG's US\$3.2 billion acquisition earlier this year of SigmaKalon Group, a Dutch coatings maker. PPG is a supplier of paints, coatings, chemicals, optical products, specialty materials, glass and fiberglass.

Ciba board agrees to public tender offer from BASF

BASF SE, the world's largest chemicals company financially, has made an offer to acquire Ciba Holding AG in a deal valued at approximately EUR 3.8 billion.

This would make BASF the second-largest supplier of coating effect materials.

The board of directors of Ciba, Basel, Switzerland, have approved a public tender offer from BASF, Ludwigshafen, Germany, of 50 Swiss francs per share for all outstanding shares of Ciba. The US \$3.1 billion deal will create one of the world's largest specialty chemicals

continued on page 4

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REPORTING ON A REPORT

First off, I would like to explain myself concerning my editorial column in our September issue titled "Nano, nano..." Some people thought I was putting in my own two cents concerning nanoparticle safety and that is just not the case. I am not a scientist. The whole piece was dedicated to reporting on a report released by the Council of Canadian Academies commissioned by the Canadian Government.

Besides the single word comment "Interesting" at the end, the few questions I asked readers mid-article such as, "Are they trying to scare us? If the substance is organic, green and safe will it not remain that way when it becomes 'nano?'" were to entice readers to respond. Thank you for doing so. Please feel free to contact me directly about anything you see in this column or any article in CFCM, and feel free to send us a "Letter to the Editor" for possible publication.

Here is one such letter concerning an article that ran last issue:

"Thank you for putting our article in your last issue - we have been receiving quite a few comments about it!"

I just wanted to let you know about something that may be of interest to your readers. Between 2001-2007 there were no product recalls based on labeling issues for non-compliance of CCCR-2001 or the cosmetics regulations. But between April-September 2008, there were 14 recalls - 9 coming from aerosol products, which I suspect many of your readers manufacture. We recently gave a talk about this at the Southern Aerosol Technical Association - our slides are available here: <http://www.nexreg.com/regulatorynews/index.php/2008/10/01/oct-1-nexreg-presenttion-for-the-southern-aerosol-technical-association/>

This month there have been 2 more recalls - again, both aerosol products (making a total of 16 products, 11 of which are aerosols).

If there is anything we can do to help your readers with this issue,

please let us know. We believe this to be a very serious problem that companies in the chemical industry need to be made aware of.

Mike Moffatt, Nexreg Compliance, Inc. www.nexreg.com"



TRADE SHOW GREEN SEASON

Fall tends to be trade show and open house season especially September as associations and distributors try to cram their shows all during the same few weeks. When you think of Fall as a season the colours that come to mind are orange, gold, burnt yellow, but according to this years' exhibitions the colour was "Green". In the wake of government Volatile Organic Compound (VOC) regulations, the emphasis among show exhibitors at Coatings 2008 in Indianapolis, IN, and Conference speakers at the Canadian Paint and Coatings Association (CPCA) event in Ottawa for example, emphasized organic "green" technologies, such as water-based coatings, environmentally safe pretreatment and finishes and more.

The consumer media is emphasizing it in a big way as well. Such as stories recently in local city newspapers about paint recycling and manufacturers turning paint-shop emissions into fuel that can generate electricity. We plan to follow-up on stories like this in future issues.

Hope you all had a great Canadian Thanksgiving and that you aren't too disappointed with the results of the recent Federal election. See you in December.

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EDITOR

Sandra Anderson
519-442-4071
Fax 519-442-1359
sandra.anderson@cfc.ca

PUBLISHER

Pete Wilkinson
416-255-1808
Fax 416-519-1313
pete.wilkinson@cfc.ca

VICE PRESIDENT

Brian Jones
905-405-1500 #223
brian.jones@cfc.ca

COPY EDITOR/PROOFREADER

E. J. Burns Anderson

GRAPHIC DESIGN

Allan S. Bates
416-485-9229
Green Apple Prepress
allan.s.bates@sympatico.ca

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Fax 416-519-1313

continued from front cover

companies. The decision was made in light of increasing industry consolidation, shifts in business development.

The deal between Ciba and BASF follows in the wake of the Dow Chemical Co.'s acquisition of Rohm and Haas in a US \$15 billion in July.

Univar News

The Dow Chemical Company has appointed Univar Specialties, a division of Univar Canada Ltd., as an authorized distributor in Canada for their Polyurethane (Polyols and MDI) product line.

Univar Canada Ltd. has also been named exclusive distributor for Eastman Chemical Company for their domestic & imported LTL hydrocarbon resin business.

KION moves

The KION business, part of Clariant Corporation, has recently moved to 4331 Chesapeake Drive, Charlotte, NC 28216, tel: 704-395-6503, Fax: 705-395-6591. KION Specialty Polymers, a world leader in silazane polymer technology, specializes in the development and manufacturing of polysilazane, polyureasilazane, and polysiloxazane intermediates for the coatings, composites, adhesives, electronics and ceramics.

New Partnership Spans the Ocean

Anguil Environmental Systems, Inc., a United States based oxidizer manufacturer, and Spooner Industries, a convection dryer supplier located in the United Kingdom have partnered to better serve each of their respective markets and regions.

After working together on multiple turnkey projects, the two companies have decided to make their partnership official. Anguil Regenerative Thermal Oxidizers (RTOs), as well as Direct-Fired, Catalytic and Thermal Recuperative oxidizers are used for the destruction of Volatile Organic Compounds (VOCs), Hazardous Air Pollutants (HAPs), NOx and odorous air emissions often generated from the drying and curing equipment manufactured by Spooner. By combining the complimentary product lines, customers and prospects can get a complete turnkey solution for their industrial drying, curing, coating and air pollution control needs. In the United States and North America, existing Spooner customers will now have the assurance of working with a dryer company that has local air pollution control and energy recovery capabilities.

DuPont Named Supplier of the Year[®] by AutoNation

DuPont has received the "2007 Supplier of the Year" award from AutoNation, the largest automotive retailer in the United States. DuPont, which received the same honor from AutoNation in 2003, is the only supplier ever to be recognized twice.

Oxea to produce Butyric acid in North America

In an effort to increase its operational flexibility the global chemical company Oxea has decided to produce Butyric acid at its North American production site in Bay City, Texas. The existing Carboxylic acids production plant will receive significant upgrading in order to produce the same reliable quality as currently delivered from Marl, Germany. The changes are expected to be completed in the third quarter of 2009. The expansion in Bay City and process improvements in Marl and Oberhausen will result in an increase of Oxea's global production output of Carboxylic acids by 25-30 per cent. Butyric acids find use in the production of flavors and fragrances, lubricants, drying agents and polymer stabilizers.

BASF Coatings Forms Strategic Alliance With Atotech

BASF has formed a strategic alliance with Atotech, for its biochemical detackification technology, chemicals in the water curtain that treat overspray paint during the automobile painting process. Once these detackification chemicals come in contact with paint overspray, they cause the paint to coagulate. The Atotech system is designed to treat solvent and waterborne paint with little or no equipment modifications. This process substantially reduces sludge, stabilizes chemical oxygen demand (COD) and water parameters, requires less maintenance, reduces equipment cleaning, improves water conservation, and virtually eliminates odors in the process.

Dow Restarts after Hurricane Ike

The Dow Chemical Company resumed operations in September at the Dow and Union Carbide manufacturing sites along the Texas Gulf Coast that were recently impacted by Hurricane Ike. Each start-up process will take up to several weeks to complete. Raw material availability and transportation logistics are expected to continue to present a challenge to the sites and to the industry throughout the region. Dow's No. 1 priority remains the safety of its personnel and the communities in which it operates as it works to return to normal operations.

The Dow Chemical Company Foundation has announced that it will donate a total of \$700,000 to help at the local and state levels. The Texas Disaster Relief Fund will receive \$500,000 with the money being directed to the communities. The Foundation will give United Way chapters in Brazoria, Galveston and Harris counties \$150,000 collectively to help support local relief efforts. The Greater Houston and Galveston chapters of the Red Cross will receive \$25,000 each to go toward community support.

Dow worked closely with local officials and emergency responders to assess the needs of communities and personnel affected and to provide support and assistance as needed.

Dow's sites in Freeport, Clear Lake and LaPorte, as

People

Kreeger Retires from Nordson

If you were to put a human face to Nordson Corporation in North America, that face would be Ken Kreeger. His down to earth speaking style and extensive knowledge makes him easy to relate to as he travels the globe, representing the company at industry trade shows giving seminars on quick colour change and singing the praises of Nordson Corporation, the company he has given his loyal service to for over 40 years.

However, as Kreeger puts it "The time has come to take a bit of a rest."

Although Kreeger jokes that, "I started when I was five," Nordson became part of Kreeger's life when he was a young adult and he has since taken on a variety of roles, including technical service, installation supervisor, engineering, and sales and marketing.

Kreeger is currently Director of New Business Development Worldwide for the Nordson Industrial Coating & Automotive Systems division, in Amherst, Ohio. Responsible for all new finishing business development worldwide.

Kreeger holds four patents for powder coating equipment.

He has instructed and presented papers at numerous industry clinics, conference and education-

al events for PCI, CCAI, SME/AFP, PEI, The University of Southern Mississippi, and other organizations.

He is also Co-author of Powder Coating, The Complete Finisher's Handbook (PCI) and AFP/SME Powder Coating Book.

When it comes to Professional Organizations, Kreeger is Past President of the Board of Directors for the Porcelain Enamel Institute; Past President of the Powder Coating Institute (PCI) 2003-2004; Member on the PCI Board of Directors 2004 to 2005. He is currently President of the Board of Directors for PCI in 2008.

"With over 40 years' experience in the finishing industry, Ken Kreeger has been part of this industry since its very inception in the early 1970s. In that time he's been a part of the evolution of this dynamic coating application technology," states a press release from Nordson.

With powder in his blood, Kreeger plans to do some consulting within the industry after leaving Nordson. Although, "He's not sure exactly what right now, but that's the plan," says the company. He sees new opportunities opening up around the world every day, with the potential for significant growth on a global scale. And, he admits, since powder is such a 'clean' process, it's a perfect fit in this age of lean and green!



The very hands on Ken Kreeger demonstrates the newest spray technology at the Nordson Booth during Coatings 2008 in Indianapolis, IN.

Gelest Appoints Matt Edison Business Manager

Gelest Inc. recently announced the appointment of Matt Edison as Business Manager for Silicones, Performance Products and Gelest's Cosmetic Raw

Materials Subsidiary Gelest PCS. Edison will be responsible for business development and product management in this division and Gelest PCS product lines serving the optical device, advanced microelectronic packaging and cosmetic markets.

He joined Gelest in 2001 as Project Engineering Manager to develop the company's state-of-the-art manufacturing facility and to subsequently overhaul the customer service, warehouse, fulfillment and production scheduling systems. For the past four years he has served as Product Manager for Silicones and Gelest PCS as well as directed Gelest's recently announced facilities expansion in 2007.

Edison has 19 years experience in the specialty chemical industry including engineering and operations management roles with DuPont, General Chemical and Inloex Chemical, in addition to Gelest. He received his Bachelor of Science degree in Mechanical Engineering from Clemson University.





Surface Finishing Conference & Exhibition

November 20, 2008

White Oaks Conference Resort & Spa (Niagara-on-the-Lake, ON)

PLAN TO ATTEND! LIST OF TOPICS INCLUDE:

- A Report on the Metal Finishing Energy Efficiency Benchmarking Study
- Canada's Commodity, Construction and Service Economy
- Updates in Environmental Legislation That Affect the Canadian Surface Finishing Industry
- Global Environmental and Economic Trends Impacting the Surface Finishing Industry
- Ontario Ministry of Labour's Targeted Firms Initiative
- How Source Water Protection Initiatives (under NEW Clean Water Act) Will Impact Industry in Ontario





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well as the Union Carbide facilities in Texas City and Seadrift successfully implemented their hurricane preparedness plans and were safely shut down before Hurricane Ike made landfall. The Company's business centers were also closed.

Dow's site in Plaquemine, Louisiana and Union Carbide's St. Charles Operations in Hahnville, Louisiana, which were impacted by Hurricane Gustav, were not directly affected by Hurricane Ike and continue with their recovery and start-up.

The Dow Chemical Company Foundation recently announced that it will donate a total of \$500,000 in Louisiana to provide assistance at the local, regional and state levels. The sites have also been helping their affected employees.

Troy Chemical Receives NJ DEP Environmental Stewardship Award

Troy Corporation, Newark, NJ manufacturing facility was recently awarded the New Jersey Department of Environmental Protection Stewardship Award. This award is given to members of the regulated community who are engaged in positive activities that benefit the environment. The NJ DEP presented the award to Edward Capasso, Corporate Director Environmental/Regulatory Affairs.

The NJ DEP's Environmental Stewardship Award recognizes businesses and corporations that go beyond the minimum requirements of existing rules and regulations.

Wagner Announces Enhanced Direct Factory Service Group

Wagner Systems, Inc. has recently reorganized the service group. Wagner's new Direct Factory Service Group is headed by Jeff Porters, who has over 23 years of experience with Wagner. The service group now consists of three application technicians, two controls specialists and the addition of a liquid service specialist. In addition to the enhanced direct Wagner service group, service is also available through the local-based authorized distribution network available throughout North America.

Emerging Technologies

At the Coating 2008 Conference, an informative seminar had 9 speakers who each gave a 15 minute presentation on their newest most innovative product for the industry.

Dave Chalk from Galaxy Associates, Inc., spoke about New Pretreatment Products for Energy Costs Savings — GX Clean 5180, 85, 87, 89, and non-phosphate treatment conversion coating. He emphasized the Lean & Green Approach being good for business as well as worker hygiene and healthcare. He said there are four E's driving development: Energy; Environment; Economy; Efficiency.

Continuing on the pretreatment theme, David Schimpff of Dubois talked about pretreatment evolution and the DuraTEC wand with their phosphate-free ambient temperature product. They call it a phosphate-free transition metal pretreatment, a sustainable trend for recirculating spray, recently engineered and now available for manual wand. He offered visuals of pretreatment comparisons and showed a case study. The product is available in ready to use gel applications.

Ken Kreeger from Nordson was on hand to talk about quick colour change. He joked that he has been 40 years at Nordson and started when he was 5. He talked about the capability of from one to 100 or more colour changes. He said the main goal is to have as little powder in the system at one time. It starts with first pass transfer efficiency. He spoke about the manual gun technology of Encore and Prodigy, and how to optimize the aerodynamics of a powder application process. Then he covered colour change methods.

Mark Zimmerman of Wagner Systems Inc. had a new paint pump he wanted to tell people about. The Unica 4-270 is a unique AODD pump with a 4.5:1 pressure ratio. It is self priming with adjustable speed, air operated, variable pressure high resistance to abrasive products and more.

Back to the topic of pretreatment, Hans SerVaas of Italtelco USA sang the praises of a New High Speed In-Line Pre-Treatment Powder Coat System designed to save time, labour and space. The new system replaces tanks. Items travel one after the other horizontally at high speed, and are raised to a vertical position for space-savings during curing. All engineering difficulties have been solved and patent is pending.

Gerry Lachut of The Hilliard Company talked about Ceramic Membrane Crossflow Ultrafiltration for Alkaline Cleaner Tanks. He said the ceramic membrane ultrafilter is a time tested technology that is relatively new to painting and metals finishing. It involves an alkaline

cleaner bath and is also suitable for oily wastewater separation and concentration. Other features include excellent chemical resistance; broad pH range of 2-13; inert to solvents and common chemicals and can be aggressively cleaned. It has a high temperature operation up to 200 degrees F and a low thermal coefficient of expansion.

Phil Henriques of DuPont Industrial Coatings spoke about a new air-dry coating: the Imron Elite Express-Air Dry. It was developed to improve paint application, consistency and reduce process times. Air dry saves in energy costs. Its features and benefits include high solids 2-component polyurethane paint; low VOC and ultra low haps; lead and chrome free; over 18,000 colour references, including solids metallics and special pearl effects. It also has single stage and basecoat/clearcoat availability and no bake requirements because it is an air dry system. It has multi-colour striping flexibility and one cross coat application.

Enrico Piva of Decoral System, an Italian company from Verona with a US office in Florida, presented a wood grain and other decorative finishes with powder on 3D objects. This patented hydro sublimation and IR system produces wood, marble and fancy effects on complex 3D metal objects for indoor/outdoor applications with powder coating and heat transfer films. He then explained how hydro sublimation worked. It involves immersing the 3D object in a tank and no top coat is required.

Last but not least, Keith Torp from Fanuc Robotics showed attendees a new small painter robot. His presentation involved some movies showing the robot in action. It is actually one of their standard robots with added features for painting and made smaller. The robot will do it the same every time and overspray will be reduced. He said the cost to install it in a facility would be US\$50-60,000.

All presenters had booths on the show floor at Coatings 2008 so attendees could have a hands on look at their new products.

Pricing Updates

Resins Rising

Dianal America, Inc., will increase prices of their resins products by up to 10 per cent effective October 13, 2008. The increases are in response to the unrelenting rise of raw material prices as well as with other costs associated with production. On August 28, Dianal increased the prices of several copolymer resin grades. Those products are not affected by this announcement.

Oxea Announces Global Price Increases

Oxea will increase off-list prices in USA, Canada, and Mexico by .03 US\$/lb for i/n Butanol, i/n Butyl Acetate, n Propanol and n Propyl Acetate effective October 1, 2008, or as contracts allow. This increase is in addition to any previously announced mid quarter price increase.

Oxea reserves the right to make any adjustments to its price increase announcements as a result of the

CALENDAR OF EVENTS 2008

November 5 - 6: Powder Coating Course, Holiday Inn Express, San Diego, California, Instructed by the powder coating experts at TIGER Drylac USA, www.surfacefinishingacademy.com

November 8: TOSCOT Spouses Night, Mysteriously Yours Mystery Dinner Theatre, 2026 Yonge St. Toronto, ON at 6:30 pm, curtain time 8 pm. Members are asked to register by Oct. 24. www.toscot.org

November 20: Surface Finishing Conference & Exhibition, White Oaks Conference Resort & Spa, Niagara-on-the-Lake, ON. Visit www.thecasf.ca for more information.

December 4: TOSCOT Christmas Luncheon, 3215 Derry Rd. E, Mississauga, ON, www.toscot.org

impact of natural disasters such as hurricane Ike.

Oxea is a global supplier of solvents, polyols and oxo derivatives such as carboxylic acids, olefin derivatives and alkylamines. www.oxea-chemicals.com.

Nuplex Resins Announces Price Increase

Nuplex Resins, Louisville, KY, has announced a price increase of \$0.10 per pound for all acrylic resins sold in North America effective Oct. 30, 2008.

Perstorp Increases

Perstorp, Sweden has increased the price for its HDI (hexamethylene diisocyanate) and IPDI (isophore diisocyanate) monomers and derivatives by 10 to 15 per cent.

Tronox Surcharges for TiO2

Tronox Inc. has announced a U.S. \$0.04 per pound energy surcharge for all TRONOX titanium dioxide grades sold in the North American paper market, effective Oct. 15, 2008. This is in addition to the July 1, 2008, U.S. \$0.04 per pound and Aug. 1, 2008, U.S. \$0.06 per pound energy surcharges for North America.

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COATING 2008 A success

Organizers are pleased with Coating 2008, September 23-25, Indianapolis, IN, which tended to have a focus on Green Technologies, and Energy Efficiency. There was a positive response to the 30 technical conference sessions, and plant tour. More than 150 exhibitors, a handful of which were Canadian, displayed their newest products and welcomed the chance to explain their technologies.

Coating 2008 is sponsored by the industry's leading trade associations: the Powder Coating Institute, the Chemical Coaters Association International, the Electrocoat Association, the Porcelain Enamel Institute and the Industrial Heating Equipment Association's Infrared Division. ■

Photos by Pete Wilkinson



Alan Moon Guspro, Chatham, ON.



Cindy Skelton and Todd Hain, Nordson study a Fischer Thickness Gauge with Paul Lomax



Richard Northrop, ESQ, and Bob Wells, DeFelsko.



Myles Compton discusses the Electrosteam Generator with Doug Hayward and Ken Engel, Powder Coating Specialty.



Livio Agnoletto, Bob Nicholas and Ritesh Desai, Prism Powder Coatings, Concord, ON.



Mike Kurceba, EPC Powder Manufacturing Grassie ON, Dennis Rocheleau, ITW BGK, Pino Martella, VentCor Systems, Woodbridge, ON.



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Contact: JP Guertin, VP Marketing
E-mail: superior.finishes@shawbiz.ca
Phone: 2049859820
Fax: 2049859823

WWW.SUPERIORFINISHESINC.COM



Dave Scharphorn, John Cole, Parker Ionics, Chris Nyrhila (Paintronics), Chris Mulder.



Greg Taylor ITW GEMA Oakville ON with the new Magic Center Quick Color Change System introduced at Coating 2008.



Brian Coutts and Bob Whitman, EPC Powder Manufacturing, Grassie, ON.



Jay Cressman and Damien Tushman, Uni-Spray.

continued on page 8

When Image is Everything

DuPont CoatingSolutions delivers high quality coatings designed to make your products look great – and make you look brilliant. With a wide range of decorative and functional finishes, chances are, if you build it, DuPont has you covered. Our complete line of coating technologies include:

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Mark Busse and Justin Breeden Sothern Systems chat with Mary Carpenter.



Alan Hartman and Tom Christie, Protech Chemicals, St.Laurent, QC.



Joel and Brenda Alverson, Bex.



Stopping for a visit at the CFCM booth, Chris Marinakis, Epsilon, Toronto, and Robert Ablamowicz, DuPont Coating Solutions.



Dennis Houseweat and Aivars Freidenfelds, Elektro-Physik.



Eric and Chris Nyrhila, Paintronics, Scarborough, ON.



Don Case, Production Systems, Ron McIlvane and Allan McKellar, DriQuick.

Canadian Manufacturing Week - 2008



At the Exel booth (right to left): Douglas Peacock, S.T.Rajan, Paul Kelly, Mike Boers and Mike Baglione.

Canadian Manufacturing Week (CMW) held at the International Centre, Mississauga ON September 23 - September 25, 2008, Canada's definitive showcase for design engineering, maintenance products and industrial support services was a large well attended event. It had hands-on demonstrations and expert-led conference sessions, and ran alongside Weld Expo Canada. There were a handful of exhibitors pertaining to the paint, coating and industrial finishing industries. Here are some photo highlights. ■

Photos by Brian Jones



Caps & Plugs (right to left): Ally Burden and Paul Hamilton.



Guspro's John Mariconda, Sales Manager.



Alliance Plastics (right to left): Lee Benvenuto and Doug Smith.



From left, Brian Jones and Burns Anderson man CFCM booth.



Jonas Zelisko at the Bex booth.

continued from front cover

in his opening address that the convention "has been designed to share knowledge that is critical to our industry's success." He said the CPCA is now recognized by the Government and other stakeholders as the voice of the Canadian paint and coating industry as it has moved from a "traditional" issue based organization, to a proactive, analytical based organization utilizing scientific, economic, social and other forms of analysis that are the basis of our government relations and issue management strategies. He challenged attendees to "better serve this industry by reaching out, by contributing, by serving".

John Baird Minister of The Environment was scheduled to give The Keynote Presentation, but due to the election was replaced by CTV Political Commentator Mike Duffy. Duffy recommended that the industry work with their local MPs toward fostering a grass roots understanding of the changes and challenges that are facing the paint industry by inviting them to their operations to show how they are changing and discuss the future needs of the industry.

Edward J. Donnelly, Chair of the International Paint and Printing Ink Council (IPPIC) gave an overview of the worldwide paint and coating industry. The 2007 Global output was 27 Billion Liters valued at \$85 Billion US. The 2007-2012 forecast is for a 4.3 per cent increase in value and a 5 per cent increase in volume. The 2007-2012 Forecast for North America is for volume to grow .8 per cent and 1.9 per cent in value.

Andy Doyle, President National Paint and Coating Association (NPCA) stated that the US Coatings market has an annual value of \$20 Billion, but in the first 6 months of 2008 US housing spending was down 5.4 per cent which lead to a decline in architectural coatings, while OEM coatings were holding their own based on strong US manufacturing exports. The Canadian market in 2007 produced .5 billion liters with a value of \$2 Billion US. In 2002-2007 the Canadian value grew 6 per cent on a volume growth of 4 per cent. The Canadian 2007-2012 growth is forecast at 3.5 per cent to over \$2.2 billion. The NAFTA cross border trade in coatings has risen 53 per cent in 5 years to \$2.6 billion with the US/Canadian share representing \$2 Billion.

CPCA President Jim Quick updated the convention on the Ministry of the Environment VOC Regulations for AIM (Architectural, Industrial and Maintenance) Coatings. Gazette I was passed in

Conference



Edward J. Donnelly, Chair of the International Paint and Printing Ink Council (IPPIC) gave an overview of the worldwide paint and coating industry.



Andy Doyle, President National Paint and Coating Association (NPCA) makes a presentation at the CPCA Conference in Ottawa.



Jim Quick CPCA and Mike Duffy CTV do the Mike and Jim Comedy Show.

April in 2008 after consultation with the CPCA who acted proactively with the Government to mitigate some of the consequences of the original regulatory proposals. Gazette II was expected to pass in the 4th quarter of 2008, but has probably been delayed by the Oct. 14th 2008 Federal Election. It is still expected that implementation will take place in 2009 with a 2010 stop manufacturing date and a sell through date of 2012.

Bruce Henderson, DuPont, outlined the Effect of Environment Canada's 2008 Auto Refinish VOC Regulations on the Coatings Industry. The CPCA and the Auto Refinish Coating (ARC) manufacturers assessed the impact of Gazette I

made numerous presentations to Environment Canada, helped EC with contact and consultation with the Collision Repair industry. The major challenge is converting the collision industry to high solids primers, clears and waterborne basecoat and the time required to convert. DuPont established a new training facility in Montreal, supported regional Repair Association education courses and run a DuPont Road show across Canada to educate their customers. Waterbornes add other challenges including product freezing, cleanliness requirements, material handling and airflow management.

Attendees toured Ottawa Sunday afternoon on vintage (1966)

London double-decker buses with stops at local landmarks finishing at the ByWard Market for beer and Beavertails.

The Suppliers Night at the Museum of Civilization began with a spectacular IMAX film Wild Ocean followed by a reception and dinner in the Grand Hall filled with awe inspiring west coast totems and carvings from ancient times to modern sculptures.

The Monday September 15th plenary session began with a world economic outlook from Jim Allworth VP, Director & Portfolio Strategist RBC Dominion Securities. He predicted that the Federal government and the Bank of Canada were finished cutting rates, but were both dedicated to getting credit markets functioning normally again.

Christian Tardiff Manager Communications AkzoNobel Decorative Paints Canada, gave an overview of the commercial impact of the pending VOC regulations and its impact on Akzo Nobel/SICO architectural coatings. He said change was accelerated by "a global market, a green building scene, increased government regulation on VOCs as well as consumer awareness..." Seventy five per cent of AkzoNobel R&D personnel spent

Saturday Reception



David Faherty and Michael Morden, Troy Corporation, with Lysanne Lavoie of CPCA enjoy the Saturday reception.



Tony Guertin Jr. Superior Finishes, Duncan Duha, The Duha Group, Maureen Duha, and Marjorie Guertin.



During Saturday's reception at the CPCA Conference in Ottawa, Maryse Gervais with Andre Buisson, Laurentide and Jean Marc Pigeon, Inortech Chimie overlooking the Rideau Canal.



Darrin Noble and Jim Edwards, Home Hardware Stores chat at the CPCA Saturday reception.

IN THE NEWS

two years on product upgrades to be compliant one year in advance of the new regulations. SICO began by launching Ecosource Professional Zero VOC- Zero Odour paint in 2005 and began the phasing in of 0 VOC reformulations of their best selling paints in March of 2007.

Monday afternoon tours included the National Gallery of Canada and Cumberland Heritage Village that recreates a 1930's depression era village with buildings and arti-

facts collected from the surrounding area. The evening gave participants a private tour of the Parliament buildings followed by the Chairman's Dinner at the Canadian War Museum where Brian Edwards thanked everyone who helped him in his 2 year term as Chairman and introduced incoming Chair of the Board of CPCA for the next 2 years, Pierre Dufresne, President of Sico and General Manager Decorative Paints Canada for AkzoNobel.

The Industry Statesmen Awards were presented to Benoit Venne and Lorne Browne for their dedication to the paint and coating industry; and Rick Duha, The Duha Group, was presented the Roy Kennedy Outstanding Achievement Award that goes to an individual who demonstrates exceptional dedication to the Association, its members and the paint and coatings sector.

Tuesday morning, Noel Bonnici VP & Senior Security Advisor RBC Dominion securities offered advice

on business and succession planning using various insurance vehicles, followed by Ron Buist, former Marketing Director Tim Hortons, who covered the development of the products and services introduced by Hortons including the "Roll Up The Rim to Win" campaign. Brian Edwards thanked the participants and invited everyone to the 2009 Convention in Niagara Falls. ■

Story and photos by Pete Wilkinson



Rod Paterson, A.S. Paterson with Jean-Marc Pigeon and Errol Bonaventura, Inortech Chimie visit during the Supplier's Night at the CPCA Conference.



Jim Allworth, VP, Director & Portfolio Strategist, RBC Dominion Securities.



Brian Edwards DuPont CPCA Chairman congratulates Benoit Venne on receiving the Statesman Award with Jim Quick CPCA.



Christian Tardiff, Manager Communications, AkzoNobel Decorative Paints Canada.



Dr. Torsten Pohl, Director of Business Development, Bayer Material Science.



Bruce Henderson, DuPont Canada.



Ron Buist, former Marketing Director Tim Hortons who covered the development of the products and services introduced by Hortons.



Brian Edwards CPCA Chairman thanked the participants and invited everyone to the 2009 Convention in Niagara Falls.



Statesman Award winner Lorne Brown tells the audience about his life in coatings.



"The Spirit of Haida "Gwaii", by Haida artist Bill Reid (1920-1998) greets visitors before they encounter the size and scope of the other carvings at the Canadian Museum of Civilization.



Rick Duha, The Duha Group was presented the Roy Kennedy Outstanding Achievement Award.

Association News

The American Coatings Show & Conference: Green Light for 2010

All signals are set to "Go!" for the next American Coatings Show & Conference, (ACS) April 12-15, 2010 at the Charlotte Convention Center, Charlotte, N.C. The conference begins Monday, April 12 - 14. The show from Tuesday, April 13 - 15. ACS is hosted by the National Paint & Coatings Association (NPCA), Washington, D.C., and Vincentz Network (VN), Hanover, Germany; Nürnbergmesse North America, Atlanta is organizer of the show.

PCI & CCAI Announce COATING WEST and COATING EAST 2009

In a departure from the traditional large international show each Fall, The Powder Coating Institute and the Chemical Coaters Association International have announced that they will hold two regional events in 2009 in an effort to reach out to targeted market segments along with general industrial finishing markets.

COATING WEST 2009 will be held on March 2 & 3 at the Planet Hollywood Resort & Casino, Las Vegas, NV and COATING EAST 2009 is scheduled for October 13 & 14 at Gaylord Opryland, Nashville, TN. Each event will consist of a two-day technical conference program along with a two-day exhibition. The COATING WEST event will target aerospace, custom coaters, architecture, and agriculture & construction equipment. COATING EAST will focus on automotive, appliance, general metals and wood. Both events will consist of a special evening networking event for all attendees and exhibitors.

PCI and CCAI Corporate & Custom Coater members will receive discounts for exhibiting and all exhibitors will be offered an additional incentive for early reservations in both events. Booth sales, programming content and promotion are underway.

Changes at TOSCOAT

The Toronto Society of Coatings Technology launching a new season with a new executive, on the request of its

membership has done away with its monthly dinner meetings. Dave Saucier, new TOSCOAT president, in the associations' September newsletter says he will begin discussions with both OCCO and the OPA to explore the benefits of sharing, merging and/or working more closely together. TOSCOAT's first event is Spouses' Night this fall followed by the annual Christmas luncheon. The Annual General Meeting in the spring, the annual golf tournament and then the two-day technical symposium at Niagara Falls in October 2009. Saucier says Toronto has been selected as the venue for the October 2010 FSCT Symposium on Coatings Regulations and Related Analytical Techniques.

Dates Announced for uv.eb West 2009

The Association for UV & EB Curing Technology, has announced its return to the West Coast on February 17-18, 2009, for uv.eb WEST 2009. This will be the third installment of this event, which educates current and potential users on the benefits and application of UV-

and EB-curable technology.

Minnesota paint and powder coating expo

The Twin Cities Chapter of Chemical Coaters Association International (CCAI) and the Minnesota Technical Assistance Program (MnTAP) at the University of Minnesota are hosting the 7th Minnesota Paint and Powder Coating Expo on Thursday, March 19, 2009, at Century College in White Bear Lake, Minnesota (near St. Paul).

The Expo, which includes a vendor show, hands-on demonstrations and technical seminars, regularly attracts approximately 400 participants.

Cutline Correction

In the September 2008 issue of CFM magazine, on page 9, as part of the Ontario Paint Association golf photos, Doug Parsons of Home Hardware was mistakenly identified as Darren Noble. We apologise for any confusion this may have caused.

Inortech Chimie Open House Presents New Waterbase Technologies and Approaches



Jean-Marc Pigeon, President of Inortech Chimie Inc. welcomed 32 customers to their Terrebonne, QC, Head Office and Laboratory for a series of technical seminars on formulating with New Waterbase Technologies and Approaches. Speakers were on hand from Taiwan, Sweden and the USA.



Jean-Marc Pigeon

Troy Moss and McWilliam Davis from Evonik Tego presented Synthetic Resin DS 50, a solvent free dispersion of a polyurethane polyol resin for inks, lacquers and pigment concentrates that is lightfast, and improves hardness, adhesion, gloss and accelerates drying.



Troy Moss

Adhesion resin EP_DS 1300 is a special polyester resin to improve adhesion in coatings on critical substrates and intercoat cohesion of multi-coat systems on metallic, mineral, and plastics substrates.



McWilliam Davis

Kelly Smith, Business Development Manager, Nuplex Resins, discussed the Setaqua range of VOC compliant waterborne self-crosslinking emulsions that allow the formulation of industrial and decorative coatings that meet low VOC regulations while obtaining superior mechanical properties unobtainable with traditional thermoplastic emulsions.



Kelly Smith

Kelly also introduced Water

Borne acrylic polyols that are available for 2K systems that exceed solvent based performance at 100g/L, and novel surfactant and surfactant free technologies for improved water resistance, exterior durability and film performance.

Bill Otterbein, Hawthaway, discussed Hauthane polyurethane resins and the new NMP (N-Methyl-2-Pyrrolidone)



Bill Otterbein

free DMM (Dipropylene glycol dimethylether) based alternatives for architectural and industrial coatings. Europe is restricting all new use of NMP and California is also introducing new labeling regulations. The DMM grades are also APEO (alkylphenol ethoxylates) free. Bill highlighted the different DMM grades and the NMM grades they replace. Hawthaway also offers several non co-solvent and cationic grades, Hydroxyl-Functionality, Polycarbonate based PUD's, High PVC adhesion, and silicone-containing PUD's that allow the fine tuning of physical and chemical properties in low VOC coatings.

Zohon Tsai, Everlight Assistant Manager Specialty Chemicals highlighted Eversorb Light Stabilization for waterbornes. Waterborne coatings are based on water soluble resins and dispersions that easily degrade under UV exposure. Coatings gain increased durability with the addition of Hals (Hindered Amine Light Stabilizers), UV Stabilizers alone or in combination as well as ease of handling, improved gloss, and colour retention. Tsai introduced a novel product line for waterbase systems "the AQ series". These are in solution thus do not need long



Zohon Tsai

and intense dispersion and do not leave any residue in the system filters.



Michael Wolfe

Michael Wolfe, In Chem introduced Phenoxy polymers for water based systems.

The water-base Phenoxy polymers have inherent chemicals resistance along with unparalleled hardness and impact resistance. Indeed, coatings made with out of Phenoxy will have a 4H hardness and 160 lbs front and reverse impact. Also, these Phenoxy will impart excellent adhesion to difficult substrates like glass and aluminum. These Phenoxy polymers are the choice for can coating having FDA direct contact approval and outstanding flexibility.

Hans Lagnemo and Jason Kilpatrick of Akzo Nobel EKA introduced Binzil SM Silane modified colloidal Silica for polymers, cleaners and waterborne coatings. The silane modification increases hardness, abrasion resistance and improved blocking. The wetting properties increase interaction with the substrates for improved wood penetration, corrosion resistance, adhesion and pigment dispersion.



Hans Lagnemo



Jason Kilpatrick

The hydrophilic/hydrophobic balance reduces dirt pick-up. Used as a cross linker in polymers, resins and plastics increases hardness, heat and scratch resistance. They mentioned that they are working on new modifications and stabiliz-

ers for this nano example: Acrylated nano SiO₂ for UV cured systems.

ers for this nano example: Acrylated nano SiO₂ for UV cured systems.

During some downtime attendees toured the facilities.



Touring the lab at Inortech, Carine Lairret Inortech explains inner workings to Maryse Trudeau, Omar Meftouh and Daniel Kéroack of Akzo/Sico.



From right: Roberto Gagnon Sunamco, Roger Mouhanna Inortech.



Farshid Ganjavi GMA (Center), Aage Iversen and Michel Gelly Inortech.

Inortech was pleased with the attendance to their open house and plan to have many more in the future in order to keep their customers informed of the newest technologies available in the industry.

Story and photos by Pete Wilkinson



Inortech Chimie, Inc.

Waterbased, Easy to Use and Low Cost

By SANDRA ANDERSON

Producers of pigments face the same challenges as the rest of the paint and coatings industry: increasing raw material costs, a fluctuating Canadian dollar, transportation and fuel costs, government regulations and especially growing customer demands in the face of all these challenges. Despite the obstacles, manufacturers are continually in their labs and are meeting those demands with product technology. When it comes to manufacturing pigments in today's marketplace there are three main customer demands that need to be met.

GREEN

First, there are the environmental demands. Consumers want water-based coatings so that means water-based pigments. They need to be free of Volatile Organic Compounds (VOCs). Being such, the coatings still need to meet all the other features in demand such as high resistance in weathering and other strength and durability issues.

Weatherability is an important topic when it comes to powder coatings, and several technologies are currently available in the marketplace offering this high-end performance to anything the environment can throw at it.

EASY

The other way manufacturers are meeting their customer's needs is by creating pigments that are easily

dispersable, with no grinding required, easy to use, easy to handle. A lot of people in the industry have worked hard to make things easy for their customers.

LOW COST

The third key aspect in demand is high economy, low cost pigments. To achieve this they need to perform efficiently so no costly time is wasted as well as being economical to purchase.

Evonik Industries, formerly Degussa, feels it has answered these needs with a new full series of easy to handle pigments preparations called INXEL, available in 22 colours. They are solvent and VOC free and have an ease of dispersion, eliminating the need for pigment grinding. They have a significant reduction in dispersion time allowing for high production flexibility. The company says there is excellent pigment stabilization providing good colour development. Other features include dust-free handling, granules can be dosed easily and precisely, good solubility and compatible with most binders for solvent based coating system.

"It has been developed to give you the best of everything," says Maria Nargiello, Sr. Technology Manager, Evonik.

BLACK AND WHITE PIGMENTS

Black and white pigments are the foundation of many coatings formulations.

Black pigments help to protect both the coating and the underlying substrate from the harmful effects of ultraviolet light. They are used in a wide variety of applications including automotive, decorative and industrial applications.

"The performance requirements of Carbon Black pigments used for automobile base coats are becoming increasingly stringent with regard to jetness and a bluish undertone. They must be stable in waterborne systems and feature a very high resistance to weather," states some Evonik literature.

Titanium dioxide (TiO₂) is by far the most important and widely used white pigment in the coatings industry. It imparts whiteness, brightness and opacity to coating formulations.

The key to using TiO₂ as efficiently as possible is choosing the correct grade.

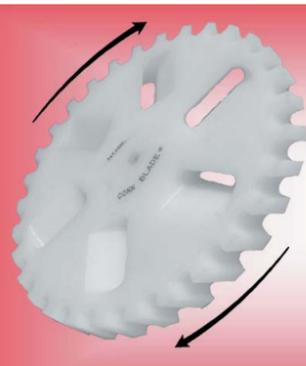
Carbon black also works to absorb UV light and impart durability to a coating.

BASF offers a range of organic and inorganic black pigments that perform in unique ways to reduce heat build-up in all coated surfaces. Transparent black pigments are used to reduce the external heat build-up of coatings, thereby reducing the rate of oxidation thermal degradation of the paint film. This delivers multiple benefits, including the extension of the life of the paint film and reduced need to re-coat or perhaps protect the material underneath the paint, for example, applications such as sensitive electronic components. These pigments are also used in applications such as roofing, marine and automotive.

While black and white pigment producers enjoy widespread use, they continue to feel the pressure from rising costs of feedstocks. The cost of raw materials and utilities have been escalating at an unprecedented rate and these price increases translate to the customer.

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To offset escalating raw material prices, manufacturers choose to focus on productivity, energy efficiency, and sustainability.

Petroleum-based carbon black pigments are also feeling the pressure.

In response to the trend toward greener products, many manufacturers are investing in research and development.

BASF's Xfast stir-in pigments were developed as a direct result of collaborations with its customers. They are free of solvents, alkylphenol ethoxylates (APEOs) and volatile organic compounds (VOCs). They offer many features that help customers increase the efficiency of their process, including pigment concentrations equal to or above 80 per cent, easy dispersion and dust-free particles. Additionally, they have an extensive shelf-life and are free of surfactant incompatibilities. Xfast pigments are easy to handle, resulting in a clean workplace, and do not require milling, which eliminates the need for expensive dispersion equipment and electricity cost.

DuPont Titanium Technologies also has products that meet the three above mentioned needs of customers.

Evonik also Subhead has two new blacks, Panther and Nerox that they feel meet customers' needs.

THE GLOBAL PIGMENT MARKETPLACE

According to a marketing study by the Freedonia Group, global demand for organic colorants was to have grown 4.9 per cent through 2008. Pigments were to continue to outpace gains in dyes and the Asia/Pacific region is to replace North America as the largest regional market. The study analyzes the US\$8.4 billion global dye and organic pigment industry. It presents historical demand data for 1993, 1998 and 2003 and forecasts to 2008 and 2013 by product such as disperse dyes, reactive dyes, acid dyes, basic dyes, direct dyes, azo pigments, phthalocyanine pigments; by market such as textiles, printing inks, paints and coatings, plastics; by world region and for 15 countries.

The study also examines the market environment, details industry structure, evaluates company market share and profiles 31 major industry players including Ciba Specialty Chemicals, Clariant, Dainippon Ink and Chemicals, and DyStar.

Meanwhile, all pigment manufacturers are investing in R&D to meet their customers' needs of water-based, low VOC, easy to handle and disperse, and low costs ■

What are they?

ORGANIC PIGMENTS

These are natural pigments such as Cadmiums, Cobalts, Earth Colors, etc. They are tiny, opaque rocks and integrate well with mediums (both oils and acrylics) allowing a high pigment load. Organic based paints are also generally opaque,

which means they have strong covering power.

INORGANIC PIGMENTS

These are pigments created in the laboratory and include the Phthalocyanines, Quinacridones, Dioxazenes, Naphthols, etc., which resemble tiny, translu-

cent chips of stained glass. They tend to be fussy when mixed with a medium and can't reach the high pigment load enjoyed by organic hues. They also tend to be transparent, which means that they don't have the covering power that the organics do.

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- **Innovative and Fresh Editorial**
- **Accurate and Durable Buyers Guide**
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250 The East Mall Suite 1103
Toronto, ON, Canada M9B 6L3
Phone: 1-416-255-1808 Fax: 1-416-519-1313
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Colour Shifting, Colour Textures, HIGH PERFORMANCE

Specialty coatings refer to high performance. While specialty job requests include everything from texture, wrinkles, hammer tones, river texture, crackle, wet look, veiling, colour shifting, metallic and of course flat semi gloss and gloss finishing. When it comes to paint and coating manufacturing, customers want both.

"You would be surprised what people ask us to do," says Tony Cox of HIS Industrial Coatings, a company that specializes in liquid coatings.

As technology becomes more complex, the need for coatings with specialized functions continues to increase. The electronics industry, for example, demands conductive and insulation coatings. High temperature-resistant coatings are needed in the aerospace industry. Fire retardants contribute to consumer safety and coatings for plastics serve a number of protective and decorative functions.

But when it comes to those highly attractive special coatings, there is a lot available.

The liquid marble and granite specialty coating for example is a million year old technology being requested in the modern world. It has the ability to withstand water, mildew, rust, flaking, discoloring, it is non-toxic and is fire retardant, and also the ability to be sprayed, rolled and troweled onto a surface. Surfaces include concrete, block, brick, plaster, drywall, wood, plexyglass, glass, on top of painted surfaces, arches, walkways garage floors, soffits, pillars, inside or outside, hot-tubs, or even swimming pool walls and ceilings.

OVERCOMING COLOR MATCHING CHALLENGES

Coatings manufacturers as well as pigment suppliers are squeezed by conflicting demands such as keeping pace with customer requests for increasingly high quality products with special effect pigments, all the while customers demanding that costs be kept down.

Color is the big seller and as metallic and pearlescent finishes grow in popularity, color matching these special coatings is a challenge ... being on-target and on-color without the need for correction. There can be costly delays in color matching and manufacturing. Different gloss levels between batch and standard can easily translate into expensive rejections, particularly in darker

colors. There is the consideration of how the light source affects color sensation: a sample will look quite different under sunshine than it will under fluorescent plant lighting. Effect pigments that created for a unique or rich look compound the color matching problem by manipulating an optical range in order to create the necessary effects.

New developments are being explored with silicates and other materials that show more dramatic hue and chroma shifts than those achieved by pearlescent or metallic-flake pigments. The very characteristics of these coatings that make them in demand are the exact same aspects that make it so difficult to produce in a first-run match.

Colour matching technology is at hand.

Advantages of the latest color matching technology in the marketplace are:

- Reduced color-matching times with first try matching rates of up to 90 per cent and lab trial reductions of 50 per cent.
- Reduced raw material costs, managing, reusing, recycling by automatically storing formulas and colorants and characterize recycles by a single measurement.
- Quick and complete color specification and communication with customers and suppliers.
- Minimized waste and downtime.
- Increased productivity. Today's most sophisticated software is easy to use, and should be backed by comprehensive training and support, thereby increasing the overall productivity of the entire operation.

Customers now are turning to top-grade special effect pigments such as pearlescent and metallic finishes to enhance the look of their products and increase sales. They are looking at textures and gloss. Yet paint and coatings manufacturers and suppliers are mindful of being cost-effective. Any color formulation and matching process, if fraught with wasted raw materials or off-color runs, can be dangerous to the bottom line. The latest color-matching software embraces the challenge of specialty coatings, allowing the appeal of high-end coatings to be shared throughout a supply chain that still maintains strict cost containment practices.

Even considering the recent pricing pressures in the pigment market as well as an overall sluggish econo-

my, demand for specialty coatings continues to grow.

Throughout the industry, these colorants are leading the way in buying trends by creating the dynamic visual impact that improves brand recognition and differentiation. That means these new "high end" coatings will become standard practice for the foreseeable future. The challenge is to manufacture them as quickly as possible, at the lowest bottom line. In the hands of an expert, a master shader, this seems an attainable goal.

In the laboratory, when a master

shader receives a new target color to match, he compares that target to his personal file of previous matches. Based on his visual assessment of the color difference, he selects a known recipe that is the closest match to the new target. He then adjusts the recipe until he obtains an acceptable match. If a close batch doesn't exist and an entirely new formula must be created, this in-house expert can hand mix pigments and adjust the lab batch for scale up and supplier effects based on his vast color matching expertise.

Colour-Shifting Capability

Manufacturers are seeing a trend in the request for coatings and paints with colour shifting abilities such as in automotive aftermarket applications and sports equipment. Special pigments and flake glitter give paints, coatings, plastics, textiles, and packaging ability to exhibit wide range of hues when viewed from different angles. Unlike standard glitter products, flake can be sanded, allowing for spot repairs on final product. Customers want the colour shifting look to also be resistant to degradation, maintaining color despite long-term weathering.

Research and Development in pigment flakes has resulted in manufacturers having available products with the deposition of ultra-thin layered structures similar to those found in nature, such as butterfly wings, seashells and hummingbird feathers. To produce different colors, thin-film technology can be used to precisely control the thickness, within a few atoms, of the multiple layers that compose a pigment's flake structure.

These color shifting paints and coatings contain pigments that change their color upon variation of the angle of incident light, or when the angle of view is shifted.

Some pearlescent pigments are comprised of synthetic or nonsynthetic mica particulates which are coated with a metal oxide layer. As a result of reflection and refraction of light and the angle of which the surface is observed, the particulates will show a pearl-like diffraction. The color of the light reflect-

ed by the particulates also depends on the thickness of the metal oxide coating on the particulates. The most common of the metal oxides used for coating the particulates are titanium and iron oxide which can be used in a single coat or in a mixed coating of the mica particulate. However, this color shifting technology yields low diffraction efficiency and also results in a relatively high cost. Another color shifting technology involves color effect composition pigments that provide a goniochromatic finish. These types of pigments are comprised of an ordered periodic array of monodisperse particles of defined thickness and surface area that are embedded in a polymer matrix. These types of pigments are similar to that of pearlescent pigments in that particulates of the ordered periodic structure are fixed into the matrix solution after their creation and incorporation into the matrix. A result of this is that a two step process is required. The particulate pigment flakes must be made first and then redispersed into a suitable matrix that allows a film forming coating. This two step process yields low diffraction efficiency due to relatively low crystalline array solid content and requires longer processing time and cost.

With demand for these specialty coatings and decorative finishes on the rise, research and development into ways to save costs is also on the rise. Challenges can be overcome and all these special requests can be met. ■



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INDUSTRIAL FINISHING: FLAT-LINE FINISHING SYSTEMS

pared to a handing system.

Ideally labor becomes more of a maintenance crew than a finishing crew. The best automatic flatline finishers are proactive in maintenance. As with any new system there will be a learning curve, but with flatline, that curve is expected to be a lot shorter than some systems. You have to educate yourself on the system's design and capabilities and be ready.

Another point is the flat line finish will trigger the guns accurately within the desired distance of the parts always keeping the guns at 90 degrees to the part, meaning millage will be consistent. The overspray then lands on the belt and a portion of that can be reclaimed. Apparently no automatic vertical reciprocating system can reclaim material, and no human operator



Fully automatic roll-coat and spray line for water-borne and water-borne UV coatings.

Photo supplied by Cefla Finishing Canada, Lachine, QC

can control the gun/mil thickness as accurately. One forum poster says he has seen average coating

consumption go down 20 to 30 percent on automatic spray vs. manual (both using the same spray gun

technology) just because of the triggering and gun position accuracy. A finishing business needs to ask itself how much 20 or 30 per cent of the annual coating bill is worth? And what happens to business when the manual finisher you have leaves, calls in sick, goes on vacations? It would seem to be easier to train operators than finishers.

Automated finishing does need to be regularly monitored because the machine doesn't know when it is making a mistake. Automated machines can also have a fair amount of setup and cleanup times so are more economical for large volume and long runs.

Another consideration is that as you increase your capacity to spray the doors, the faster you need to be able to make, white wood sand, dry and sealer sand the doors. The input to and output from the machine needs to keep up.

If a person plans to go automated it is best to contact two or three potential flat line suppliers for favorable references. Most suppliers will do free lab testing with coatings and parts. The majority of big box cabinet manufacturers and all office furniture manufacturers use flat lines, and even though there is discussion whether edging with flatline systems is an issue. Apparently in general it does not seem to affect the customer's buying decision of the end product. A poster on the forum mentioned Kremlin automatic spray guns as being the most popular and the best performers for flat line applications.

In speaking with equipment suppliers, it is clear that customers are demanding dedicated, specialized, professional service, whether sales, parts and after sales service related, as well as a wide range of flat line finishing products. And finishing business people want to know how to save costs and still have great quality. ■



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A Whole Lot of Heavy Duty

There is a Conveyor System for every finishing job, but manufacturers are receiving large requests

When it comes to conveyor systems the trend seems to be “power and free”, overhead, and large.

Although, Phil Guthrie at Rapid Industries Inc., Louisville, KY, says there is nothing really new when it comes to the actual technology and

ing unused ceiling areas of the facility for an overhead conveyor to go up for dry time and then eventually route through stain, laquer and sealer booths. Worker can pass carts underneath. This is ideal for low volume special items.

Tim Kunard of Automatic

vertical supports or from the factory roof, with hangers or carriers to move product at fixed speeds past booths, ovens and other workstations.

To be more specific:

Overhead Monorail Trolley

Conveyor tends to be the conveyor of choice for a broad range of manufacturing and material handling including heavy leads. Their benefits are easy turns and level changes and easy adaption to ranges of controls. They can be configured for just



An overhead Conveyor exiting the dryer at MacDon Industries Ltd., Winnipeg, MB.

main basic design of conveyor systems.

“What it boils down to is what people want it to do,” says Guthrie. “Now there are automatic controls, but the basic design hasn’t changed for years.” Rapid Industries manufactures enclosed track power-and-free conveyor systems.

When it comes to paint and coatings and industrial finishing, customers are requesting systems for large parts.

North Mississippi Conveyor, Oxford, MS, recently did some installation work in Edmonton, AB and they have installations all over the United States.

“Power free is holding its own,” says Jim Hollis. Their conveyors are used mostly in auto plants, furniture finishing and large equipment job shops although they have smaller ones too, but the demand is in the large item conveyors he says. The company deals in turnkey conveyor systems and components.

Canadian company Pacline Conveyor, Mississauga, ON, does assemblies of all sizes. They have worked with many small wood finishing shops helping them to automate. Their prime suggestion is tak-

Systems, Inc., Kansas City, MO says, “What we are seeing is the Agricultural business now with corn and the use of ethanol.” He adds, “Coatings is getting away from the monorail system and is going for overhead power ad free systems.”

In speaking with manufacturers of conveyor lubricants they are in concensus that keeping the conveyor well lubricated and clean is “the backbone of maintenance and keeping the conveyor running.”

THE RIGHT CONVEYOR

Determining the right conveyor for your finishing system needs an understanding of the different types, such as the flatline conveyor which is a combination of roll/curtain coaters, booths, robotic sprayers, flash tunnels, ovens, connected by appropriate conveyors.

The palletized conveyor is an on-floor or in-floor chain and track used to pull pallets or carts through spray booths, ovens and other intermediate workstations such as sealer sanding and repairs at a calculated rate of speed.

The overhead conveyor is a chain conveyor mounted on

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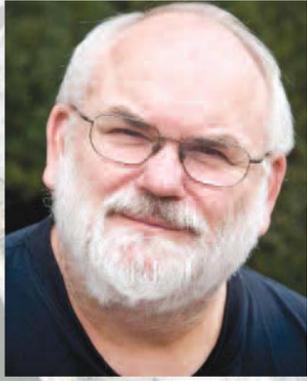


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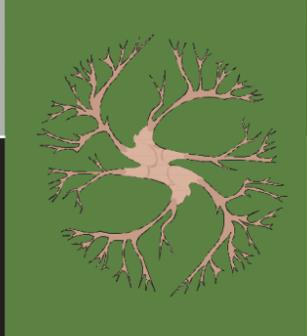


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INDUSTRIAL FINISHING: CONVEYORS

about any route of travel and any type of load without taking up valuable floor space.

Power and Free conveyors is a choice in the automotive industry, especially the heavy duty version. It can use specially designed roll formed free rail channels coupled with standard structural shapes and the track sections can be designed using a 4 inch I-beam over two facing roll formed channels with a high strength 2400 lb loading capacity and joined together with ½ inch thick steel yokes located on 30 inch centers. A track section with a special free track with an additional rib on the lower toe section can allow for close tracking of the free trolley assemblies and reinforcement of the track sections. Chain to chain transfers

occur and the design adds to long life and few repairs.

Enclosed track power and free conveyor systems are a reliable choice in the 1000 lb category and can accommodate both simple and complex handling tasks. They are well suited to computerized controls.

Three-rail powered conveyors have pedestal-type carriers that provide 360 degree access to product with spur lines routing loads to different destinations. Conveyors are able to negotiate horizontal and vertical curves and have variable speeds.

Whatever the need, a conveyor system can be designed to accommodate. As Guthrie at Rapid Industries sums up, "it all depends on what you want to do." ■

Canadian Association of Surface Finishing Conference Set for November

The stage is set for the Surface Finishing Conference & Exhibition, Canadian Association of Surface Finishing Conference to be held on Thursday, November 20, 2008 at White Oaks Conference Resort & Spa, Niagara-on-the-Lake, ON.

As of October 15, 2008 the following sponsors had been confirmed: CFCM magazine, Process Electronics Corp., Service Filtration of Canada and RWDI.

Exhibitors as of October 15 are: CFCM; Process Electronics Corp.; Service Filtration of Canada; Cyanide Destruct Systems Inc.; RFT Technologies; Peerless Custom Rack Co. Ltd.; Natural Resources Canada; World Resources Company; Stablax Canada, A Marsulex Company; Atotech Canada

and CASF-NASE

The full day of programming begins bright and early with breakfast. Program Details include a welcome by Richard Thibodeau and Michael Kuntz, Co-Presidents, CASF and Carrie Hoffman, NASE

Then Brigitte Roth, CASF will update attendees on Surface Finishing Industry News.

Presentations include A Report on the Energy Efficiency Benchmarking Study by Marc Sider, Energy Efficiency Project, CASF; and Federal Support for Improving Industrial Energy Efficiency presented by Eric Gingras, Senior Industry Officer, OEE, Natural Resources Canada; on the Economy, Something Old. Something Borrowed. Something New—Canada's Commodity, Construction and Service Economy by Aron Gampel, Vice President and Deputy Chief Economist, Scotiabank.

There is also a presentation on Environmental Legislation with Updates in Environmental Legislation that affect the Canadian Surface Finishing Industry by Jackie Campbell, B.Sc., LLB, Dianne Saxe Professional Corporation, Saxe Law Office; Global Environmental and Economic Trends Impacting the Surface Finishing Industry by Christian Richter, The Policy Group; a safety seminar, Ontario's Targeted Firms Initiative by Melanie Wegler, Ontario Ministry of Labour; and last but not least water with How Source Water Protection (under NEW Clean Water Act) will Impact Industry in Ontario by Ian Smith, Ontario Ministry of Environment. ■

Visit www.thecasf.ca for more information

PLATING AND ANODIZING: OPEN HOUSE

continued from front cover

development. The Rock Hill, SC, facility will also have a larger CRC line and a decorative plating line specializing in plating on plastics.

Atotech's Canadian Managing Director, Gene Torcoletti and President Reinhard Schneider, welcomed 180 luncheon attendees from Canada, USA, Germany and Mexico. Dignitaries on hand to cut the ribbon were Cam Jackson, Mayor of Burlington; Joyce Savoline, MPP; and Cliff Roy, Roy Metal Finishing. Attendees were treated to a tour of the lab, plating line and dip spin facility, warehouse and coating

production line.

The CRC TechCenter features a 7.5 meter sample plating line with 39 tanks that contain five different zinc and zinc alloy processes with 5 passivates and 4 sealers. The "Green Technology" line operates with Tricotect ion exchange for passivates that keeps the Fe and Zn concentration below a critical threshold to maintain bath and coating quality. Atotech's membrane anode technology for alkaline zinc electrolytes maintains high plating rates and reduced water treatment through prevention of anodic breakdown products such as cyanide.

The center also has a zinc flake dip sink and oven with a capacity of 10kg. The materials science lab includes microstructural inspection, chemical composition studies, thickness measurements, mechanical properties, and corrosion tests.

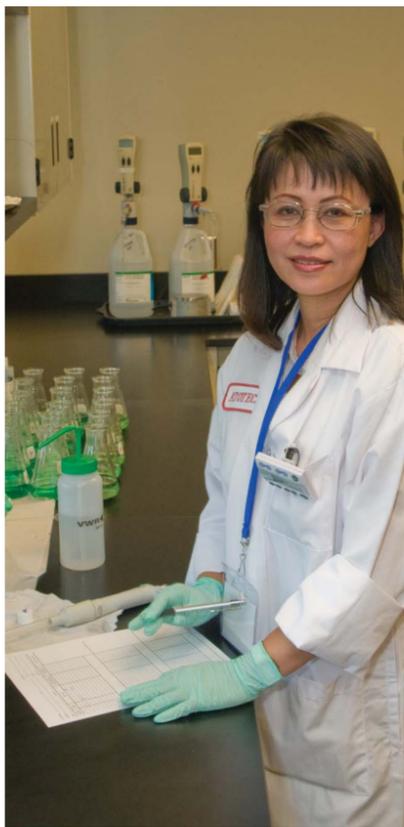
The analytical lab includes test for pH, Ion Selective Electrode, melting point, conductivity, spectroscopy, chromatography, Hull cell tests, and polarography.

A bus whisked participants to the new Elements of The Falls Restaurant at Table Rock for a reception and a sunset dinner overlooking Niagara Falls.

On Thursday morning Atotech executives presented talks on Corrosion Resistant Coatings; Surface Finishing for Automotive Fasteners; Atotech's Approach to the automotive industry and the approval process; Sustainable Development and the Global Metal Finishing Strategy.

The afternoon finished with "The Crush on Niagara Wine Tours" which transported visitors to Peller Estate Winery, Hillebrand Estate Winery and Caroline Cellars. ■

Story and photos by Pete Wilkinson



Vannry Thirakuc checks pH.



Bev Farkus leads the tour of the materials science lab.



Janet Rennie, Atotech and Lucie Mojsej, Royal Canadian Mint enjoy the view of Niagara Falls at dusk.



Gene Torcoletti, welcomes guests to the Grand opening of the North American CRC TechCenter.



Reinhard Schneider, President of Atotech, highlighted Atotech's commitment to industry by "providing Technological Solutions with a firm commitment to Green Technology, Best Local Service and Sustainable Development".



Pablo Nieto Atotech Vice President Global Metal Finishing expanded on Atotech's future Strategy to grow in GMF by providing perfectly matched processes for each production need.



Dr. Gerd Linka Manager Sustainable Development discussed Atotech's commitment to reduce the impact of its activities on man and the environment through risk assessment, certified management systems, environmental audits and the reduction of greenhouse gases.



Dr. Birgit Sonntag, World Business Manager Corrosion Resistant Coatings explained the applications and requirements for optimum results in zinc and zinc alloy plating, Cr(VI) free passivates, conversion coatings, sealers and equipment.



Hermann Donsbach World Business Manager Zinc Flakes talked about the success of black and silver zinc flake technology for automotive fasteners.



Harald Ahnert World OEM Key Account Manager explained how Atotech works with the automotive manufacturer to develop products and receive OEM Approvals.



Norm Irving explains the capabilities of the CRC Sample Plating line.



Nidhi Trivedi tests acid copper solutions.

Introduction to Metal Finishing Process Control

Atlantic Region Metal Finishing Industry Pilot Project – Final Report, Fact Sheet #11

It is obvious that optimization of metal finishing processes (choosing the best baths chemical compositions in particular) and better operation lead to higher quality of deposits and more efficient production. Other benefits include a decrease in the use of raw materials and waste minimization. However, to get those savings, it is necessary to keep all process parameters at their optimized values and to respect the recommended operation practices all the time. This very important task is called Process Control [1, 2]. It also contributes to extending baths life.

For example, this means making sure that the pre-treatment and electroplating baths are at their specified chemical compositions and free from contaminants. Otherwise, parts below customers' specifications are produced and lengthy and costly troubleshooting is required to bring the process back online [3 - 5].

Why are baths compositions changing during operation? There are many reasons: drag-out, evaporation, chemical decomposition (of organic additives in particular) and differences in the current efficiencies of anodes and cathodes. The last one results in changes of metal concentration and pH, the changes being obviously more important in the case of a non-soluble anode! Unless there is a human mistake during additions of chemicals to the baths (lack of respect of dilution factors for example) or contamination from parts fallen to the bottom of the tanks, those changes will be gradual and in proportion to the rate of production.

Thus maintaining the baths compositions can be very well planned.

There is always a range for each bath component and operating parameter. Depending on the parts to be plated, quality of deposits required by customers and production rate, each metal finisher has his preferred values for bath composition and his preferred ways to operate.

However, the optimum is usually around the middle of the range. The range being sometimes rather large, this means that it can be difficult to establish the control band width which is really required at a given facilities.

It is obvious that if the metal finisher lets the metal concentration in the electroplating bath drift too low, while attempting to increase current density (to increase production rate), he will lose deposits quality. If the metal finisher lets the metal concentration drift too high, he will lose too much metal in the rinse waters (and ultimately to the sewer or sludge) because of drag-out. If the metal finisher lets the impurities concentration get too high or the additives concentration get too low, he will again lose deposits quality. Therefore, it is the interaction between bath composition and other parameters that makes the width of the control band much smaller than the range presented in the table in this article or in data sheets from suppliers. Maintaining a narrower control band results in additional cost for more frequent baths analysis.

One important way to establish

the control band at given facilities is production experience. There should be recording of bath components analysis and other process parameters on a regular schedule. The records should be correlated with production problems (poor quality of deposits in particular). Therefore, the control band will tell if a correction should be made and how much it should be to avoid problems.

Another way is laboratory testing

TABLE 1: Hard Chrome

Parameters	Frequency	Min	Max
Hexavalent Chromium as CrO3	Weekly	224	262 g/L
SO4	Weekly	2.2	2.6 g/L
Temperature	Weekly	55	60 °C
Trivalent Chromium	Monthly	0	4 g/L
Silicate	Monthly	0	80 ppm
Impurities (Fe, Cu, Ni, Zn)	Monthly	0	5000 ppm

with baths of different compositions and steel panels. Well documented laboratory equipment for these tests is the Hull Cell [6 - 8]. The goal is to establish how far away from the optimum values electroplating can be operated without losing the deposits quality required by the customers. Keeping the panels or photographs will also allow comparison with panels prepared during process upsets in order to identify the causes, such as bath impurities or additives imbalance. The Hull Cell can be a valuable tool for troubleshooting.

However, process control goes beyond troubleshooting since it is done on a regular schedule precisely

to prevent upsets. This is the best way to manage production.

Table 1 is a partial description of the actual process control program of an aerospace company in Canada for the plating of hard chrome over special steel parts. This is presented as an example only, since the specifications for aircraft parts are very critical. More severe specifications result in narrower control band. A higher production rate can also require more frequent testing.

Finally, it is important to understand that if process control improves the quality of production, it is not a substitute for Quality Control of electrodeposits. Many properties of metal deposits might have to meet customers' specifications, such as thickness, adhesion, hardness, ductility, wear resistance, corrosion resistance and visual appearance [3, 9 - 12]. ■

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Written by Marc Sider, Eng., M.Sc.A., Energy Efficiency Coordinator for the Canadian Association for Surface Finishing (CASF).

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Clarification via Sedimentation #3 Or Getting the Sludge Out Well

WATER FACT:

“... on Nov. 30 (2007) for millions of people in Orange County, (California) pulling the lever will be the start of a long, intense process to purify the sewage into drinking water after a hard scrubbing with filters, screens, chemicals and ultraviolet light and the passage of time underground.”1

INTRODUCTION

This is the third of three articles addressing clarifiers - those “wide spots in the pipe” - where wastewater solids are settled out, providing clarified wastewater to discharge to a sewer or a receiving stream. Initially we looked at augmenting sedimentation with chemical addition. In our second paper we addressed measuring a clarifier’s efficiency - is it working within design parameters?

Now we will take a look at what success brings. With a properly working unit, you now have a collection of sludge in your clarifier and it’s very important to remove it regularly in a concentrated solids stream.

HOW MUCH SLUDGE IS IN A CLARIFIER?

Depending on how your clarifier is working - and how well you are operating your clarifier - sludge can be found three ways throughout the body of the clarifier

1. A modest volume, at the bottom.
2. Filling or partially filling most of the clarifier’s volume and
3. Floating on the surface, discharging with the clarified effluent stream.

The first one is best, the latter two being indicators of poor operation. Let’s address them first.

SLUDGE FILLING THE CLARIFIER

Typically the clarifier has a shape that directs settled sludge to further concentrate close to the bottom of the unit. The bottom may be conical in shape, or in the case of a rectangular clarifier it may have a trough at the bottom. If sludge is accumulating in quantities that fill these areas - even half way or more - and worse, filling the space above them

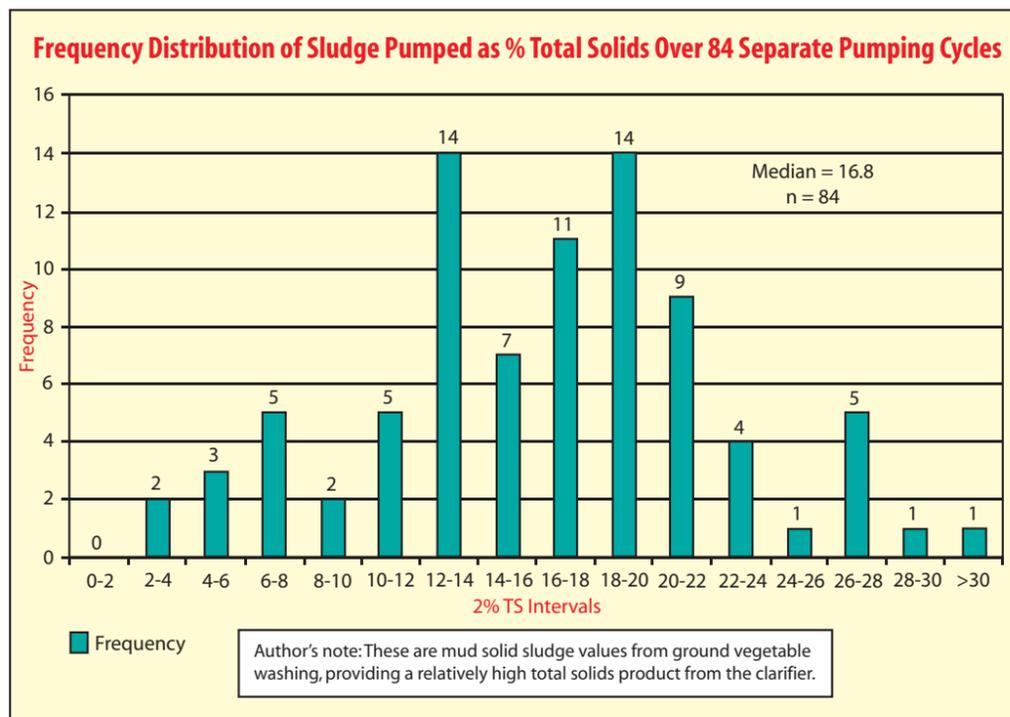
- it is most likely that you are not removing sludge quickly enough. Clarifiers are not made to see through and determining where the sludge level is can be problematic. However, there are a number of techniques to find this out.

Many units have valved outlet ports built into their side; by opening a valve and viewing the liquid draining out you can readily determine if sludge has reached this level. Better yet, you can sample the stream and determine the concentration of solids (typically, Total Solids (TS)) at that level. Check

often found in five foot lengths, marked off at regular intervals (i.e. every foot). The bottom length is fitted with a foot valve; the judge is lowered from the top, foot valve first, until it reaches the bottom. At that point, you give a modest “jerk” upwards on the tube to “set” the foot valve and pull the whole thing out, vertically. Once out, you can visually observe the level of sludge from the bottom location where it stopped inside the clarifier. Again, the sludge concentration can be measured by capturing the sludge phase from the judge by releasing

ceptable due to a high solids content. Solids on the surface may indicate that the unit is much too full, there is just no other place for them to go. However, and more likely in this writer’s experience, is that the unit may not be totally full, but still be carrying far too high a solids level and that the long period of capture in the clarifier is allowing anaerobic activity to begin, producing methane gas. The gas attaches itself to solids particulate and floats to the surface. If your sludge is strictly inorganic and you feel that there is little likelihood that anaerobic

activity can occur you may be right. However, sample and analyse your sludge for its organic content (volatile fraction) and you may be surprised at the amount of organic material found in an “inorganic sludge”. Alternatively, your sludge components or chemicals entering with the particulate may be setting up a chemical reaction, giving off the gas which is dragging the solids to the surface. Regardless, key to minimizing these effects is keeping the sludge levels at much lower levels than those where you are experiencing these problems.



each valve discharge and when you find clear water, you know your sludge level is between the last two tried. If the valve located highest from the bottom is discharging sludge, it is most likely that you are holding too many solids. It is not unusual to find that these valved outlets have not been installed and are simply plugged shut in the side of the unit. If the outlets are there, seek to have them opened during a shut down and fitted with the piping and valves needed. Your operations manual should identify the sludge level that the designer has estimated for providing an optimum sludge concentration and best quality clarified effluent. When starting up a unit this may be the best place to begin optimizing sludge levels in your particular unit.

Also, you can use a “sludge judge” to measure the level of sludge in the clarifier. This is typically composed of a clear plastic tube,

the foot valve inside a container, taking a sample and having it analysed. The sludge judge also is beneficial in showing you a profile of the sludge’s settling characteristics from the clear water/sludge interface to the heaviest sludge at the bottom. A word of caution here. The writer has seen a number of installations where the clarifier has been located so that there is very little room above the top of the unit to allow a sludge judge to be introduced or withdrawn properly - often the ceiling is just too close. Check your site before you purchase a sludge judge.

SLUDGE FLOATING ON THE SURFACE

It is hard to imagine anything positive about finding sludge at the surface of your clarifier; once there, it is very possible that it will be carried over with the “clarified” effluent, making that discharge stream unac-

SO, WHAT IS THE CORRECT LEVEL?

Clarification should maximize the solids concentration of the sludge stream being removed at the bottom and minimize the particulate solids in the effluent overflowing the unit’s discharge weir at the top.

A combination of the designer’s suggestion for what levels to keep - found in your manual - and working experience will provide you with the correct answer.

But, how do you gauge what is the best level? Mostly, by measuring the sludge Total Solids (TS) (as per cent TS) of the sludge being withdrawn from the clarifier and correlating that to the sludge level found in the clarifier. In general, if the sludge is too thin, carry additional solids levels in the unit.

What is appropriate for a sludge concentration? For the most part, that depends on the sludge type. A metal hydroxide may be fine at 1



Empty circular clarifier.

per cent to 2 per cent TS. For mud solids removed from root crops a 10 per cent to 15 per cent TS concentration is not unusual. At a municipal wastewater treatment plant, the raw sludge may be in the 4 per cent to 6 per cent range and the return activated sludge at the 1 per cent level. Your best TS concentration for an appropriate sludge level in the clarifier will be characteristic of your unique wastewater stream. As an aid, sources on wastewater of your type (trade magazines, academic research, consultants) should be able to give you a good indication of what you can expect in an optimized operation.



Clarifier effluent shows the top clear water with solids (sludge) removed.

One of the goals is to keep the sludge as thick as possible when removing it - thereby giving you less volume to handle once outside the clarifier (for further treatment or storage and haulage). However, by allowing it to become so thick that you are carrying excessive solids in the clarifier - resulting in solids overflow or gassing - results in your having to compromise on the higher sludge concentration and get more solids out, sooner, in order to protect the overall operation of the unit.

Clarifiers are meant to settle solids, let them accumulate close to the bottom and further concentrate after settling. In the writer's experience the level that solids can be kept while maintaining an appropriate sludge solids TS concentration can be quite low, filling only a modest portion of the lower end of the conical bottom of the unit.

In fact, getting the sludge out is a dynamic process that requires some attention. Clarifiers are not holding cells for sludge.

INCREASING THE CONCENTRATION OF SLUDGE IN THE CLARIFIER BEFORE PUMPING

Clarifiers are constructed to concentrate the collected solids at the bottom of the unit. This may be done passively through its shape and through manual and mechanical devices.

The shape tends to direct the solids into a much smaller confined area at the bottom than found for the upper surface where the effluent discharges. However, in settling to the bottom, sludge may get "hung up" on the sides of the tank, often in quite a large mass of solids. Once it begins to catch on the side, more solids will tend to accumulate at the same location. The simplest method provided by some manufacturers to keep these solids from staying there is to supply a pole with a brush or squeegee on it. An operator takes the pole and lowers it brush end down into the clarifier and gently pushes the solids off the side of the clarifier, directing them to the bottom of the unit. Care must be taken not to stir up particulate in order to prevent it from floating to the surface. This is typically found in a clarifier that has no mechanical device installed for aiding solids settling.

Other clarifiers have a "mixer" installed. These are often very large "cage-like" devices which rotate at a very low speed, in the lower section of the clarifier. They tend to help the solids coalesce and settle to the bottom. Run by electric motors, their speed may be variable.

Additionally, some units have a scraper mechanism that is also powered by electric motor and again rotates at a very low speed. The arms of the scraper are shaped to the bottom of the clarifier with blades positioned slightly above the surface. The scraper collects the settled sludge and directs it to a pumping well, further concentrating the sludge while moving it in from the sides and centre at the bottom of the unit. The scraper often has a torque measuring device which can be read on a gauge generally located close to the unit's motor. This should be checked regularly to ensure the rake mechanism is not pulling excess torque. There is most likely a "cut-out" device associated with the torque gauge which will shut off the scraper mechanism's motor if it becomes overloaded - which usually means there is far too much sludge in the clarifier. It is the writer's experience that a well run clarifier typically shows little or no torque on the scraper. However, this writer has also had the experience of a unit overloading and breaking a ring gear in its centre mechanism. There is no enjoyment

in attempting to run a clarifier well with its scraper mechanism down while flow continuous to bring in solids. A story for another day.

OK. The sludge is at the bottom, nicely concentrated. How do we get it out?

SLUDGE PUMPING - TIMING IS EVERYTHING

Typically sludge is pumped off the bottom of a clarifier using an automatic timer to start and stop the pump. The timer does two things. It times between pumping cycles and it times the actual pumping cycle. It is in timing these two cycles - between pumping and pumping duration - that many operations go terribly wrong.

Take the time, over a number of pumping cycles, to periodically sample the pumped sludge and measure it for per cent TS. Indeed, a visual inspection will tell you a great deal. Often the actual pumping cycle goes on too long and either the sludge hopper is empty or the pump has pulled clear water through the sludge blanket - called "rat-holing" - and for a good deal of the cycle you are pumping water. This is not wanted. Another possibility is that after pumping has started the sludge may "bridge" and not fall into the sludge hopper, again leaving you to pump water. Better to pump more frequently for shorter periods, and most often ensuring



The "conical bottom" of a clarifier showing how the sludge is confined (concentrated).

a consistent, heavier sludge, than pumping less frequently but for longer periods of time. For example, you may pump every five to fifteen minutes for approximately 30 seconds. The settings you undertake need to reflect the solids loading to the clarifier. Do not underestimate the importance of this step in successfully operating a clarifier.

Clarification is over.

Your sludge is collected and pumped into a sludge holding tank. Now what? We'll address options for sludge treatment and disposal in the next installment. ■

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John Seldon is president of Temporary Operations & Maintenance Inc., Port Burwell, ON, and has 35 years experience in the industry.

NEW PRODUCTS AND TECHNOLOGIES



ABB Robotics releases new Bell Atomizer

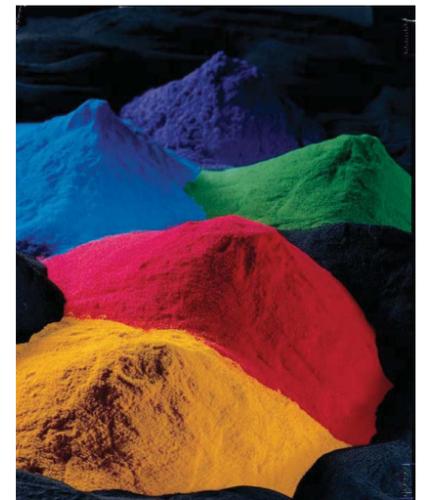
ABB Inc, Robotics Division has launched a new bell atomizer targeted at bridging the gap between affordable cost of HVLP applicators and technically superior application of bell atomizers. End users can gain greater control or color match, particle distribution, and pattern control with very little impact to existing automated spray gun systems. The Mini Bell is non electrostatic. This allows it to be retrofitted into existing automated spray systems, replacing spray guns, but not requiring the additional cost of deluge, IR detectors, etc, that make switching to bell atomizer technology usually considered a high cost upgrade. It is also available with 15mm bell cup allowing it to be used in

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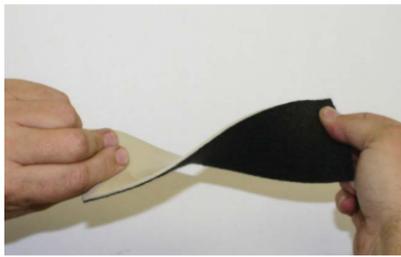
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www.chemline.net



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info@plastomatic.com

Evonik Develops New Manufacturing Process

Evonik Industries has developed a new manufacturing process for methyl methacrylate (MMA) called AVE-NEER. The new process will allow methyl methacrylate monomers and polymers to remain competitive. Like the traditional ACH sulfur process, AVE-NEER is based on the starting materials ammonia, methane, acetone and methanol, without the additional use of sulfuric acid.

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