**PIGMENT PRODUCERS**

Help Global Paint Producers Meet Local Needs

by Cynthia Challener

JCT CoatingsTech Contributing Writer

**P**igments are crucial components of paint formulations. As such, their availability, quality, consistency, and regulatory compliance have a significant impact on the ability of coating formulators to develop and produce their desired products. As paint manufacturers respond to growing competition from emerging regions, higher raw material and energy costs, and slowing economies in mature markets with increased consolidation and globalization, their relationships with pigment producers have changed accordingly. Leading pigment suppliers talked with CoatingsTech about how globalization and consolidation of the coatings customer base are affecting their activities. Recognized industry consultants weighed in with their thoughts.

Participants in this roundtable discussion include the following: Thierry Cherier, director of coating and plastic chemicals for BASF Performance Chemicals; Bernardette Conilo, marketing manager, Paints & Coatings for Ciba Corporation; Norbert Merklein, head of global marketing for the Coatings Industry, Pigments & Additives Division of Clariant International/Switzerland; Kenneth Loye, market development manager with Ferro Corporation; Performance Pigments and Colors Group; Don McBride, COO of Hexosil Tech Ltd. (a Heubach company); Barb Pacher, color designer for JDSU Hex Products; Carlos Estrada, marketing manager for Colortants in the Functional Chemicals business unit of LANXESS; Peter Kiemele, global product manager for the LANXESS Inorganic Pigments business; Tony Reed, director of global automotive marketing for Silberline; Pete Stone, market development manager for General Industrial products with Silberline; and Peter Carey-Yard, marketing director, Coatings, Performance Pigments, Sun Chemical.

The consultants providing comments represent The ChemQuest Group, Inc., a market research firm based in Cincinnati, OH. They include Vice Presidents Nick Jones and George Pilcher and Director Sue Anderson.

**JCT:** What are the similarities in pigments use for paints and coatings across the different regions of the world: U.S., Western Europe, CEE countries, Asia, and Latin America? Why do these similarities exist regardless of location?

**Rick Jones, ChemQuest:** As paint companies become increasingly global in nature, we expect to see some effect by pigment manufacturers to offer common products to customers in different regions of the world. Pigment suppliers simply can’t afford to continue offering numerous variations of a large number of different pigments. In Europe in particular, the REACH legislation will also likely drive pigment suppliers to reduce their portfolios due to the high cost of registering individual products.

**Peter Carey-Yard, Sun Chemical:** When making the choice of a pigment for a coatings application, a paint maker considers cost of use, performance, environmental legislation, and availability. The pigment’s level of performance or fitness for use has no absolute definition and can have different interpretations related to market or regional needs. Today, the largest coating producers are global players, and the choices they make for their coatings systems tend to get established as the norms in the regions in which they operate. This means that as the market further matures, regional differences will tend to disappear.

**Thierry Cherier, BASF:** Regardless of region, many paint manufacturers and their customers expect value, quality, service, and global availability. A major factor driving growth in pigment demand is the increase in construction of new office buildings, factories, roadways, and infrastructure in many different parts of the world—along with an accompanying demand for high performance pigment technology to extend the life of paint and coatings. With increasing globalization of many products, including paint and coatings, there is a need for technology that can be applied across regions.

Norbert Merklein, Clariant: The globalization in the industry and the global activities of key players in the market have created many similarities in the use and application of pigments in recent years. On the other hand, there are still technological differences across regions in specific areas, which also influence the formulations and the pigment selection. The targeted quality level also plays an important role, which can equally vary from region to region.

Don McBride, Huntsman: Overall, the growing organic and inorganic colored pigment demand worldwide can be judged similarly even though the extent of the growth rate is differing in certain regions and applications. Particularly, the increasing use of inorganic and organic colored pigments is seen regardless of locations as opposed to black and white options (while color trends vary greatly by region).

Pete Stone, Silverbine: Similarities exist due to the globalization of business and the subsequent spread of pigment technology platforms. Industrial coating formulations are undergoing significant changes, much of which is driven by environmental regulations. A lot of R&D efforts are directed at developing special effect pigments that will exhibit the desired performance characteristics and functionality in these new coatings. This innovative technology is spreading rapidly around the world.

Kenneth Loye, Ferro: High performance inorganic pigments, typically used in OEM products such as exterior building products, have been used for many years in North America, South America, and Europe. They are now finding utility in the Asia Pacific region since much of the manufacturing being done there is imported back to the U.S. or Europe as finished goods. Therefore, I would say we are entering a world market scenario.

**JCT:** What are the key differences and what dictates that?

**George Pilcher, ChemQuest:** Certain standard specifications apply in each region that lead to requirements for pigments that differ to accommodate regional norms and expectations. With time and increasing globalization, these regional preferences will be less evident—but there will always be a need for certain shades of phthalo-cyanine blue to make the bases and accents of OCEANIC’s color that is so beloved in China!

**Sue Anderson, ChemQuest:** In the future there will definitely be more coordination throughout the world, but currently global paint companies still must meet the needs of local and regional customers, and those needs vary significantly. Therefore, pigment suppliers must be able to provide products that help coatings producers make these local formulations. As a result, while the pigment producers are also becoming more global, they still rely on regional management to a large extent. Many are even forming joint ventures with local manufacturers in different regions in order to be able to provide the products desired in those areas.

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Therefore, pigment suppliers must be able to provide products that help coating producers make these local formulations. As a result, while the pigment producers are also becoming more global, they still rely on regional management to a large extent. Many are even forming joint ventures with local manufacturers in different regions in order to be able to provide the products desired in those areas.

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2007 Global Market for Pigments Used in Paints and Coatings

JCT: What are pigment producers doing to manage the globalization/consolidation that is taking place within the industry?

Peter Carly Yard, Sun Chemical: Consolidation among formulators has resulted in fewer paint companies in the U.S. In turn, significantly more leverage when it comes to purchasing pigments. They are now setting longer contracts, sometimes two or three years in length. This situation leaves pigment suppliers fighting over these contracts and could possibly lead to consolidation among pigment producers as well. The very different nature of the chemistry of organic, inorganic, and special effect pigments and the vast differences in technology used to produce them may, however, make it difficult for consolidation to provide many synergies.

Norbert Mertkein, Clariant: A proper key account management is the most important tool to manage the globalization and integration in the industry. This requires an individual set-up for each customer to meet his needs. This organizational structure also implies providing support in marketing and sales, making the differentiation and sales and marketing and research and development.

Kenneth Loy, Ferro: Most pigment manufacturers have developed a global strategy with a local strategy blend. In other words, they act locally while trading pigments in a global market. The challenge is that they can respond to whatever markets come to bear. We have seen that many North American-based companies have expanded to the far reaches of the world to participate in new markets. Manufacturers also demand that products made for their U.S. divisions be available worldwide so they can make product locally and supply globally.

Bernaldette Carujo, Ciba: To assist customers in “taking color to new destinations,” Ciba focuses strongly on developing shade solutions with outstanding properties, such as its new-generation diketo-pyrrrole-polyylyl pigment, Ciba® IRGAZIN® DPP.
JCT What are pigment producers doing to manage the globalization/consolidation that is taking place within the industry? George Pilcher, ChemQuest: Consolidation among formulators has resulted in fewer paint companies doing business in this country. Although this may be positive from a cost perspective, many smaller formulators are facing increased cost pressures, in part due to increased demand for automation and technological developments. The ability to produce high-quality and cost-effective paints is a key factor in the industry's success.

Bernadette Cairo, Ciba: The differences in paint use are mainly related to the varying requirements of the application rather than location. In Western Europe, the increasing globalization of the paint and coatings industry is bringing an alignment of quality requirements for many applications with regard to pigment usage. In the U.S., color trends reflect both the economic climate and the cultural diversity of the population. For example, with a growing Hispanic population, yellow and orange colors remain popular due to their warmth. However, this is not necessarily a trend that can be extrapolated globally.

Tony Reed, Silverline: In addition to differences in color preferences, being driven by local laws and the degree of sensitivity around the environment and environmental protection. For example, the percent of waterborne coatings manufactured and applied in Europe is greater than that in the U.S. and even more so as compared to developing nations such as China and India; although this is changing. Kenneth Loyo, Ferro: Differences can be related to the materials that need to be coated. The North American market uses different building materials than most of the rest of the world, including vinyl siding, exterior wood siding, etc. In Asia, in particular, building materials such as stucco are more common.

Peter Carney-Yard, Sun Chemical: Local market decisions, once made, can result in regional differences that persist for many years as the cost of changing can be prohibitive. A very good example of this is the choice of pigments used for architectural initial coloration. In Europe, the red generally used is CI Red 112; however, Red 188 is the preferred pigment in the United States. For blue, the green shade, beta crystal form of phthalocyanine (Pigment Blue 15.3) is the choice in Europe, whereas the United States prefers the red shade, alpha Crystal type (Pigment Blue 15.2). Another example is the United States's automotive paint industry preference for dichlorquinacridone Red 202, whereas Europe uses mostly di-methyl quinacridone Red 122.

Floor Chenier, BASF: Pigment usage is affected by many factors and can vary country by country, even within a region. For example, lightfastness and heat management may be critical requirements in high sun areas in the southeastern U.S. such as Florida. A study by the AICM shows that a number of producers are highlighting their high-temperature performance. In the United States, the automotive and architectural markets are significant. In Europe, the automotive and architectural markets are also significant. In China, the automotive market is the largest, followed by the architectural market. In Japan, the automotive market is the largest, followed by the architectural market.

Sun Chemical needs to support our global customers who already have a presence in these markets and develop strong relationships with the local producers. Sun Chemical is strengthening its presence in all of these markets by expanding the local manufacturing of pigments and allocating more resources to sales, marketing, and research and development. Kenneth Loyo, Ferro: Most pigment manufacturers have developed a global strategy with a local strategy blend. In other words, they act locally while having a global mindset. However, it is not always easy to do this, as they can respond to whatever market trends come to bear. We have seen that many North American-based companies have expanded to the far reaches of the world to participate in new markets. Manufacturers also demand that products made for their U.S. divisions be available worldwide so they can make products locally and supply globally.

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2007 Global Market for Pigments Used in Paints and Coatings

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Source: The ChemGroup Inc.
Note: Some quantities may have achieved peak increases in 2007 but others not until 2008, making it difficult to get an accurate total in terms of value.
Cosmorny™ Oranje, a pure orange pigment with outstanding durability and high saturation. To help paint companies and their customers achieve unique results that allow them to stand out in the market, Ciba develops new ways of enhancing appeal and creating new lifestyles. Ciba XYMARA™ effects include pearlescent, mirror-like or matt - metallic, and transparent. Ciba's effect pigments can be used together with conventional products to create individual new styles and designs.

New technologies that improve processes and help promote environmental sustainability include Ciba's Novel Encapsulated Additive Technology (NEAT) for coatings stabilization, which for the first time enables the equivalent level of protection in waterborne coatings to that attained with high-performance stabilizers in solventborne systems.

Peter Kiemle, LANXESS: LANXESS' Paint Competence Center offers technical support for our customers in the surface coatings industry all over the world. The team also works closely together with our R&D unit and our customers in the coatings industry on the development of new products. As far as product supply is concerned, LANXESS has a very tight global network of production sites around the world, as well as warehouses and distribution partners. Particularly in export markets, this creates additional added value within the network to the benefit of our customers. Alongside pigments and colorants, for instance, other products such as preservatives and specialty chemicals travel through the same distribution channels to our customers in the coatings industry.

Thierry Chevrier, BASF: BASF is focused on gaining a better understanding of the needs of brand owners in order to be more responsive to these needs. This allows BASF to respond faster to changes in the marketplace. We also have and will continue to maintain a global presence. Our objective is to produce products that bring the best value to our customers. As a result, even the globalization and consolidation dynamics do not affect our approach to the industry.

Barb Parker, JDSU Flex Products: The selling process is very consultative for special effect pigments. We do a lot of prototyping for our customers and have established numerous partnerships with them in order to provide formulation development support. Paint companies are struggling with fewer people doing more work, and they are relying on suppliers like Flex Products to provide added value. By doing so, pigment producers can differentiate themselves from competitors.

Tony Reed, Sillerline: We are expanding our global reach. Today we have manufacturing, research, and technology facilities in North America, Europe, and Singapore. We have sales operations in Mexico, Brazil, and Shanghai and we are in the process of establishing operations in India. We embrace the holistic global view of our customers with operations in multiple regions of the world and who expects us to supply our technologies to their various locations efficiently and effectively. Of course, we also have a very aggressive program around exploring and developing new technologies.

We also believe that identifying global key individuals at larger customers is critical for establishing productive relationships.

What do you see as the key factors for success in the more consolidated and globalized paint and coatings industry that exists today?

Sue Anderson, ChemQuest: A key factor for success is the careful selection of distribution regions where pigment producers do not have direct sales forces. Having the right face in front of the customer is crucial. In addition, a distributor with the right set of contacts who speaks the language, understands the local culture, and also provides active support can make a huge impact on the success of a pigment supplier entering a new region. We are seeing special effect pigment manufacturers using this approach in Eastern Europe and North Africa, for example.

Tony Reed, Sillerline: Having global operations with the ability to promote our technologies and supply our products to those regions of the world that need them most is important. Combining this approach with a global pricing strategy based on local market conditions and an ability to respond quickly on a global scale provides further assurance of success.

Don McBride, HexionChem: As mentioned earlier, production sites are located in the U.S., China, South Korea, and Germany. Together, we have technical and logistical global service networks are necessary to meet specific regional demands. A high level of interaction to grind and develop to provide value-added products while meeting increasing environmental awareness, product safety requirements, service expectations, and competitive prices. A global network is necessary for Ciba Chemical's already developing new and exciting pigment solutions that will be launched soon to the coatings market.

Peter Kiemle, LANXESS: The key success factors are cost efficiency and productivity, compensation for escalating raw material costs are basic prerequisites in the more consolidated and globalized paint and coatings industry. Sustainable growth is requiring more effort in the area of backward integration.

Thierry Chevrier, BASF: Energy conservation, environmentally friendly products, sustainability, and driving value are key factors across many industries.

Bernadette Corujo, Ciba: What Ciba has been focusing on is adding value to our customers' businesses by being close to them in the marketplace, i.e., offering local support; providing them with innovative products that help them to achieve novel effects so they can stand out in the market; helping them optimize their processes so they can improve production efficiency and ultimately save costs; and ensuring consistent, fast products and services worldwide so that global business needs can be served in the rest of the world.

Peter Carey-Yard, Sun Chemical: Sun Chemical's work is to find solutions that are tailored to meet our individual customer needs. This means our understanding of the applications we supply must be first class. Only by developing strong relationships with our customers can we appreciate and fulfill their needs. We recognize the markets we serve want color and effects. For this reason we have expanded our portfolio of products to include mica and aluminum effect pigments. M&D effort in this new area for Sun Chemical is already developing new and exciting pigment solutions that will be launched soon to the coatings market.

The takeover of a pigment production line in Jinshan near Shanghai will strengthen the position of the Inorganic Pigments business unit in the global market. With this acquisition, LANXESS has also been able to secure raw material supplies for its pigment mixing unit in Shanghai and will therefore be completely independent of local external suppliers.

Norbert Merklein, Clariant: Key success factors are key account management, the right set-up of international service tailored around individual customer needs, technical cooperation and innovation discussions and, of course, the right product portfolio, which is available on all continents. This requires consistent global portfolio management. Clariant is addressing all these issues extensively, and has globalized its activities in all these areas.

How are these factors different from 10 years ago? Do you see them changing within the next 10 years? If so, how?

Gerry O'Sullivan, Fennco: The biggest change from 10 years ago is that so much production has moved to Asia. Over the next 5-10 years, I see quality being significantly improved by low cost producers.

Rick Jones, ChemQuest: As part of the demand for increased performance, paint companies will also be placing a lot of pressure on pigment manufacturers to improve the consistency of their products. Raw material consistency is a source of huge costs for the formulation, and these costs are not often recoverable. Pigment dispersions are receiving growing attention because they provide an excellent solution. They may cost paint producers more up front, but overall cost savings are manifest through not only the improved consistency, but also the reduced analytical requirements and other costs associated with trying to disperse the pigments themselves—which often leads to batch-to-batch inconsistencies.
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Don McBride, Hexion: As mentioned earlier, production sites located in these globally connected, technical and logistical global service networks are necessary to meet specific regional demands. A high level of inventory needs to grind and manage to provide valued-added products while meeting increasing environmental awareness, product safety requirements, service excellence, profitable niche markets, and constantly increasing production efficiency and productivity to compensate for escalating raw material costs. These are basic prerequisites in the more consolidated and globalized paint and coatings industry. Sustainable growth is requiring more effort in the area of backward integration.

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Peter Carey-Yard, Sun Chemical: Sun Chemical works with its customers to find solutions that are tailored to meet our individual customer needs. This means our understanding of the applications we supply must be first class. Only by developing strong relationships with our customers can we appreciate and fulfill their needs. We recognize the markets we serve want color and effects. For this reason we have expanded our portfolio of products to include mica and aluminum effect pigments. M&D Effect ink for Sun Chemical is already developing new and exciting pigment formulations that will be launched soon to the coatings market.

Peter Krieme, LANXESS: The key success factors are consistent high quality and reliable supply, but innovation, close technical cooperation, and reasonable pricing are also very important. Our research team works closely with our production and engineering units to devise intelligent ways to improve yields, reduce raw material and energy consumption, and achieve even more consistent quality. These measures and the technical expert we have acquired over many decades in the dyes market that we have forged with our global customers, forms a strong basis that equips us very well indeed to meet the stringent demands of the surface coatings industry.

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JCT: How are the effects different from 10 years ago? Do you see them changing within the next 10 years? If so how?

Gerry Vara, ChemQuest: The biggest change from 10 years ago is that so much production has moved to Asia. Over the next 5–10 years, I see quality being significantly improved by low cost producers. Rick Jones, ChemQuest: As part of the demand for increased performance, paint companies will also be placing a lot of pressure on pigment manufacturers to improve the consistency of their products. Raw material inconsistency is a source of huge costs for the formulator, and these costs are not often recoverable. Pigment dispersions are receiving growing attention because they provide an excellent solution. They may cost paint producers more up front, but overall cost savings are manifested through not only the improved consistency, but also the reduced analytical requirements and other costs associated with performing tests to disperse the pigments themselves—which often leads to batch-to-batch inconsistencies.

Sue Anderson, ChemQuest: Tightening of environmental regulations has been a theme for the past 10 years, and will continue for the next 10 as well. The general "green" movement that has been taking place in mature markets is also beginning to spill over into developing regions.

Barb Parker, JDUS Flex Products: In the future, we will see much more reliance on virtual capabilities. Rendering and replication of color will be done in a virtual way. The Internet will play an ever-increasing role, too, and as consumers continue to become increasingly more educated and thus more demanding, both from a performance and environmental aspect, we can expect to see continued attention.
ward internal consumption for developing markets that were only yesterday mainly concerned with export of goods from their regions. Analysts believe that region-based consumption is increasing and that new technologies are being adopted faster than ever before.

Peter Stone, Silbereisen: I expect that the next 10 years will see significant and more rapid change than we have seen in the last 10 years. There were few significant new pigments companies 10 years ago, and in the next 10 years we will see many more than we have today. In such a competitive environment, successful companies will be the ones able to develop technologies that impart desired aesthetics and performance characteristics that are significantly evolved from the standard products that are on the market.

Tony Reed, Silbereisen: In addition, the product development cycle will continue to become shorter. Greater global competition and, specifically, the emergence of pigment manufacturers in developing regions has resulted in new technology platform development cycles being shortened by many global manufacturers in order to always be ahead of trends in the market place.

Norbert Mathlein, Clarient: Indeed, the speed of change and the pace of globalization have increased significantly over the last 10 years, and customers react much quicker in their respective markets. Therefore, as a supplier we need to follow these trends and stay in very close contact with our customers, ensuring the best possible communication with the market, and with our own organization.

Globalization and the addition of upcoming new producers in Asia have led to increasing competition and, hence, a demand for even more innovative products and efficiencies. Increasing raw material prices add further pressure to this situation. Globalization has also led to a demand for greater product consistency and availability worldwide. With this trend to continue, one can expect consolidation in the industry.

Peter Case, Yarida, Sun Chemical: For the NAFTA and European pigment manufacturers that supply the coatings industry, competition from new producers in China and India has continuously squeezed profits. In this period, the capacity to supply pigments outstripped the demand by very significant percent-ages, first for classical pigments and later for some high performance categories. The result has been that many pigment suppliers are no longer with us, and those that are still manufacture pigments in these new markets.

Over the next 10 years the high per capita growth of the emerging markets will result in supply and demand becoming balanced. For the emerging markets, stricter environmental controls and fiscal considerations will result in the consolidation of many local pigment manufacturers there. The producers that remain will be those that can supply the global market with needs that are more homogenized.

We expect that Sun Chemical’s global customers will continue to expand their business in these new regions, and we also expect the more successful companies born from these regions to become major global players.

Thierry Chevret, BASF: The need for value and innovation remains relatively constant. Ten years ago innovation meant providing the best value, 20 years ago it meant providing the best product, and today it providing the best product at the best value. In the future, the environmental focus will increase, and value and environmental stewardship will go hand-in-hand.

Peter Kiwame, LANXESS: Consistent high-quality, reliable supply, innovation, close technical cooperation, and reasonable pricing are just as important now as they were before in the paint and coatings industry. We do not expect any thing to change in that respect in the coming years.

Cal Poly Winter Short Course Slated For February 9-13

California Polytechnic State University, San Luis Obispo, CA, will host its Poly- mers and Coatings Winter Short Course on February 9–13, 2009. The course will primarily take place at the Embassy Suites in San Luis Obispo. Wednesday’s programs will be held on the Cal Poly campus.

The one-week course will feature instructors from both the academic and industrial side of the coatings field. Many aspects of coatings technology will be covered, with an emphasis on state-of-the-art techniques. Other coatings topics such as pigments, precursors, and properties of coatings, will be discussed in order to compare and contrast with traditional liquid coatings. There will also be a discussion of VOC and air quality aspects of coatings led by experts from both industry and government regulatory agencies. Participants are expected to have had some exposure to the coatings field along with a working knowledge of chemistry and other sciences. For more information, visit www.polymercoatings.calpoly.edu or contact Ray Ferrando at 805.756.2395 or pfundos@calpoly.edu.

Seminar Looks at REACH Regulation Issues

Ciba Expert Services, Basel, Switzerland, will host a one-day seminar relat ed to training requirements for REACH. It will be held November 20, 2008, at the Hotel Alexander Plaza in Berlin, Germany. Aim is to concentrate specifically on the preparation of the documents needed to fulfill REACH registration requirements. Through case studies and practical examples, attendees will learn how to prepare the REACH registration documents and, in particular, how and when to assess safety. Details on hazard and risk assessment will also be provided. The seminar is designed for EHS specialists, product safety and regulatory advisors, product stewards, toxicologists, and R&D scientists and managers.

For further information, contact +41 (0) 63 1380, congress@congress plus.ch, or www.congress-plus.ch.

Missouri S&T to Hold Paint Formulations Course

Missouri University of Science and Technology, Rolla, MO, is offering a short course entitled "Introduction of Paint Formulation" on November 3–7, 2008. The course will be held on the Missouri S&T campus.

Featuring both lecture and laboratory sessions, the course will take attendees through the basic steps of paint formulation, from understanding the process to an actual laboratory formulation. Attendees will learn to formulate paints to meet specific requirements; have the opportunity to study and experiment with basic raw materials and their influences on the performance of finished coatings; gain an understanding of the limitations of paint production equipment and formulation variables for moving a coating from the lab to the plant; and learn about modern chemical instrumentation as applied to coatings. Attendees will also be taught how to use calculation formulas to ensure that coatings products are in compliance with government regulations.

For more information on the course, visit http://coatings.est.missouri.edu, or contact Michael Van De Mark at 573.544.4191 or coatings@est.missouri.edu.

Viscosity Measurement: Focus of One-Day Courses

Brookfield Engineering, Middleboro, MA, is offering 4 month of fall 2008 dates for its one-day courses, which cover the topics of viscosity and texture management through hands-on instruction. The Practical Course on Viscosity Measurement is scheduled for October 16 and November 6 in Middleboro; October 21 and November 22 in Atlanta; November 18 in Safford, AZ, and November 20 in San Francisco, CA. The Applied Course on Viscosity Test Methods will be held October 17 in Middleboro and October 23 in Atlanta. The Practical Course on Texture Analysis is slated for November 4 in Middleboro. Arrangements can be made for those courses to be conducted at a company's location, and the content can be tailored to specific product applications.

For more information, call 800.628.8139 or visit www.brookfield engineering.com/services/educational-programs.