

RESUMES DES CONFERENCES – MOTS-CLES

ABSTRACTS OF CONFERENCE PAPERS – KEY-WORDS

[AFNOR CERTIFICATION \(France\) Cécile GERVASONI](#)

Ecologie et innovation, c'est possible avec l'écolabel européen

Les ecolabels attestent qu'un produit est plus respectueux de l'environnement tout en étant aussi efficace et aussi performant qu'un produit semblable destiné au même usage.

Mots-clés : Ecolabel, processus de certification, champs d'application.

[AIRBUS GROUP INNOVATIONS \(France\) Dr. Sophie SENANI](#)

Stimuli-sensitive coatings: Easy way to monitor the materials' properties

Because of their very light weight, excellent in-plane properties and high specific strength CFRP have found many uses in structural applications.

Nevertheless over a certain threshold of energy, impacts could lead to internal serious structural damages barely visible, necessitating the use of expensive and high time-consuming ultra-sonic non-destructive inspection.

Thus constant growing use of CFRP rises up new challenges for health-monitoring of structural parts, easy to implement for daily inspection.

Additional "visible" detection system on parts, like indicative coatings, will allow focusing US inspection only on required areas. Investigations to develop stimuli-sensitive coatings will be presented. In one hand, the aim is to obtain a coating not only able to highlight part's area exposed above critical energy density, but also to fulfil aeronautic requirements adding highly severe constrains about adhesion performance or coating's life time... One more challenge here is to properly translate industrial requirements to match coatings properties and *vice versa*.

Key-words: Indicating coating, impact detection, health monitoring, composite structural parts, aeronautic.

[ALLNEX AUSTRIA GmbH \(Austria\), Dr. Andreas STEINER](#)

Novel oil-modified acrylic multi-domain dispersions

Waterborne acrylic dispersions and alkyd emulsions have been extensively used for architectural coatings for decades, each technology having its advantages and drawbacks. While alkyd emulsions generally exhibit very good application characteristics such as high gloss and good penetration, they lack in performance for weathering resistance. Acrylic dispersions, conversely, are disadvantaged in terms of flow, leveling and appearance, but perform well for outdoor durability. Many attempts have been undertaken to find the balance of performance by hybrid technology approaches. The presented work highlights a novel synthetic approach to oil modified acrylic multi domain dispersions combining acrylic-like outdoor durability with alkyd-like appearance and application behavior.

This innovative synthetic concept, along with supportive performance testing results, will be outlined and discussed.

Key-words: Multi-domain; dispersion; oil-modification; weathering resistance; universal adhesion.

ARKEMA COATING RESINS (France) Patricia BEURDELEY

Nouvelles émulsions acryliques aux propriétés hydrophobes pour les peintures décoratives

New acrylic emulsions with hydrophobic properties for architectural coatings

La résistance à l'eau est une des plus importantes demandes des revêtements en peinture décorative et en construction. L'imperméabilité à l'eau ou à la perméabilité à la vapeur, l'absorption d'eau permettent de déterminer la résistance à l'eau. La nouvelle propriété recherchée est la résistance au blanchiment, que ce soit en intérieur comme en extérieur.

La présentation se focalisera sur le développement de technologies permettant d'obtenir des liants acryliques hydrophobes en émulsion. Ces grades de polymères permettent à la fois d'être performants en résistance à l'eau et aux alcalins, tout en ayant une bonne résistance au blanchiment. Ils apportent au film de revêtement des propriétés de barrière et de durabilité, indispensables pour les revêtements intérieurs ou extérieurs.

Mot-clés : Résistance à l'eau, liant, performance.

BIOPRESERV (France), Dr. Thierry LACOUR

Test-system development for screening of innovative coatings: measurement of anti-biofilm properties of coatings – Application to antifouling

A biofilm is a community of microorganisms that forms a viscous layer on a natural or artificial surface, mostly in aquatic or humid environment. The biofilm consists of adherent cells that are often embedded in a self-produced matrix of extracellular polymer.

We developed a unique laboratory test system for R&D screening of coating prototypes.

Combining data of cells bioadhesion on surfaces and growth inhibition in liquids in close contact with the coating, it is possible to screen for coatings that prevent bioadhesion and to quantify precisely the toxic effect on living cells in the environment. The tests permit to measure biocidal effect of coatings on biofilm but also to measure biocide release from coatings to liquids. In that sense, this accelerated test system opens the way to the discovery of effective technical solutions that respect the environment: innovative coatings preventing bioadhesion without toxic effect on microorganisms from the natural environment.

Key-words: Biofilm, antifouling, biocide, environment.

BLACK BEAR CARBON BV (The Netherlands), Ad VAN OORSCHOT

The future of carbon black pigments is green

Will address how Black Bear's green carbon black pigments are highly attractive technical substitutes for some conventional furnace and gas carbon blacks used in coatings:

- Introducing three new innovative "green" tire grades of carbon black – NEptune C100, C80 & C60
- Performance in terms of colour strength and hyper-dispersibility in both water- and solvent-borne systems.
- How these grades will drastically reduce the carbon footprint of coatings and contribute to preserving our planet

In terms of topics, it could fall into different categories: pigments and extenders - sustainability

Key-words: Pigment, substitute, sustainability.

CHEMLYNX (France), Dr. François MAGNIN (WORKSHOP)

Simplify and optimize paint formulations with the new Formula software

Paints are a complex blend of pigments and fillers dispersed in a binder matrix. Selecting the right quantities of materials to achieve the desired properties at a reasonable cost is critical. Important parameters such as Pigment Volume Concentration, Pigment Volume and Volume Solid Content are crucial to get control on the formulation. However, calculations can be complicated without the proper tool: Formula is a software designed to manage, edit and optimise paint systems. Designed by a formulator it provides a clear interface with all relevant information and an exhaustive set of tools to support the formulation process.

Key-words: Formulation, software, PVC.

[CLARIANT PRODUKTE GmbH \(Germany\), Hendrik AHRENS](#)

Dimethyl Glucamine – A neutralizing agent based on renewable raw materials

Neutralizing agents are used in aqueous paints only in small quantities. However, their effect is of decisive importance. They regulate the pH value and contribute to the storage stability of the paint formulation. Dimethyl Glucamine is an innovation that provides good paint stability while additionally contributing to aspects relevant to health and environment, such as very low VOC levels and eco-label compliances.

Key-words: Neutralizing agent, VOC regulation, ecolabel.

[COLOR CONSULTING \(France\), Alain CHRISMENT](#)

La Couleur, entre objectivité et subjectivité

Nous vivons dans un monde de couleurs. Aujourd'hui, la maîtrise de la notion de couleur devient un outil indispensable pour valoriser les produits, les applications et les espaces, créer des ambiances, ou encore adapter des lieux à leurs fonctions et des produits à leurs caractéristiques. Eugène Chevreul affirmait au début du XIX^{ème} siècle « La couleur est en nous ». Cette assertion bien connue suffit à démontrer la difficulté de communiquer la couleur à un interlocuteur qui construit sa propre image colorée dans son cerveau, à travers ses yeux, son filtre culturel, sa sensibilité à la lumière et à la matière. Derrière le nom d'une couleur se cache souvent une représentation personnelle à chaque individu. Or, dans le milieu professionnel, on ne peut pas se contenter de perceptions subjectives, il faut pouvoir communiquer efficacement sur des bases objectives. C'est pour répondre à cette difficulté qu'est née la colorimétrie, technique qui permet de définir et de classer les couleurs afin d'obtenir un langage unique. Grâce à l'instrumentation colorimétrique et à la colorimétrie, on peut maintenant mettre en équation les trois principales composantes de la couleur : lumière, matière, observateur. La couleur perçue est devenue une couleur mesurée, concrète, exacte et manipulable, que l'on peut communiquer plus facilement. Spécialistes ou utilisateurs de la couleur, vous pouvez entrer dans un monde tout en couleurs, spécialement conçu pour vous transmettre des informations objectives et pratiques sur la couleur grâce à la colorimétrie. Mais qu'est-ce donc que la couleur ?

Mots-clés : Couleur, colorimétrie, perception.

[COVESTRO DEUTSCHLAND AG \(Germany\), Bernadette GERHARTZ-QUIRIN](#)

Smart PU-hardeners : Going to the extremes in functionality to improve performances of PU coatings and films

Crosslinkers for PU systems represent a huge toolbox, allowing to fine tune performance and application parameters of respective formulations. In order to cover both formulation needs and end user requirements, hardeners can be finely adjusted: by selecting and modifying the right building block and by adjusting the functionality.

High performance waterborne and high solids systems require an optimized low viscous and low functional hardener. Among the different structural approaches available from Covestro, each has its individual advantages. Crosslinking density, elasticity and other parameters are triggered differently. Besides low viscous hardeners, we also want to highlight the other extreme: highly branched and high functional hardeners can be tailored to have a significant impact on parameters such as curing speed and glass transition temperature. New, innovative hardeners with unique structural components will be discussed.

Key-words: PU, hardener, formulation.

[CRODA \(France\), Kévin BOZEC](#)

Nouvelle technologie antimicrobienne pour des peintures de protection saines et durables

Le marché des peintures est de plus en plus demandeur de protections saines contre les bactéries, algues et moisissures, et ainsi éviter les aspects dégradés par exemple des salles de bain et des murs extérieurs.

Les peintures contenant les MyCroFence offrent une protection antimicrobienne de longue durée contre toute une variété de microbes, sans risque de résistance de ces derniers. Ces avantages

permettent aux fabricants de se différencier en offrant des peintures intérieures ou extérieures sans pictogramme de danger.

La technologie antimicrobienne des MyCroFence de Croda n'empoisonne pas les microbes mais interagit avec eux par un procédé physique, telles les épines d'un cactus. Elle modifie le liant pour qu'il forme lui-même une barrière physique antimicrobienne. En l'absence de biocides migrants toxiques, ils assurent une protection antimicrobienne non-stop et saine. Les revêtements intégrant les MyCroFence peuvent être donc utilisés efficacement sur les murs, plafonds et sols.

Mots-clés : protection antimicrobienne, durabilité.

[DPI \(Netherlands\), Ronald KORSTANJE](#)

How long term commitment in fundamental understanding of coatings pays off

From a research point of view industrial coatings are very complex systems. A program approach focused on fundamental understanding of the contribution of the various resins, additives and solvents and development of relevant analytical techniques has resulted in a better understanding of various coating types as well as their interaction with various substrates. The program set-up as well as the results from the various research projects will be discussed for water based coatings as well as for powder coatings.

Key-words: waterborne coatings, film protection.

[DSM COATING RESINS \(Netherlands\), Derrick TWENE](#)

Health risk-free resins for a better future, based on fatty acid modified polyurethane dispersions

Neutralizing amines, and in particular triethylamine, are widely used in water-based polyurethane dispersions. Often in combination with dimethylol propionic acid they provide the required anionic stabilization of polymer particles. After application, these amines evaporate from the coating, which has been confirmed by independent measurements. However, triethylamine is classified as toxic, and as it is volatile it has a large environmental impact.

In order to contribute to a more sustainable future, radical changes in the chemistry and stabilization mechanism of the PUDs are required. Therefore, a novel mechanism was introduced, which has resulted in the development of a next generation of oxidatively curing polyurethane binders that contain no Volatile Organic Compounds (VOCs), are label-free, and fulfill all the requirements for indoor air quality and other desired certifications, all this without jeopardizing any of the excellent performance properties of the corresponding paints.

Key-words: PUD, environment.

[ENSC LILLE, Unité de Catalyse et Chimie du Solide, Raphaël LEBEUF](#)

Drying of alkyd resins : effects of the nature of the lipidic part and of siccatives

The drying of alkyd resins, and thus the physico-chemical performances of their corresponding paint film, is a chemical process due to the oxidation of their unsaturated lipidic part. Indeed, the oxidation provides hydroperoxides, which are decomposed by the action of metals, forming covalent bond at the origin of the reticulation of the paint film. These metals, named dryers or siccatives, are also able to promote the oxidation of the lipids. The aim of this work is thus to understand the role of the siccatives following the nature of the oils, and to determine which oil would be the most suitable for the composition of the resin. For this purpose, the autoxidation of mono-, di-, tri-unsaturated FAMES as well as their mixtures was studied, and the effects of several siccatives were also determined on the oxidation of sunflower FAMES.

Key-words: Siccative, oil, autoxidation.

[HEUBACH GmbH \(Germany\), Dr. Jörg HORAKH](#)

EIS (Electrochemical Impedance Spectroscopy) – A fast and effective screening method for the evaluation of anti-corrosive pigments?

Evaluating anti-corrosive coatings is highly time and resources consuming. In the past the testing time for system screenings was already significantly reduced from years to months respectively weeks. This could be achieved by changing from natural weathering to accelerated test methods, like salt spray and humidity exposure.

The electrochemical impedance spectroscopy (EIS) is regarded as a high potential method allowing to reduce a single test to hours. This would enable technologists and scientists to realize real high-throughput screenings in the field of anti-corrosive coatings.

The current talk will present results of paint systems varying binders, substrates, anti-corrosive pigments etc. and salt spray test results will be compared with test results of the much faster EIS from the standpoint of an anti-corrosive pigment manufacturer.

Key-words: EIS, resistance, anticorrosion.

[HEXION RESEARCH \(Belgium\), Linda COPPIN](#)

Design and formulation of high performance waterborne epoxy binders and paints

Waterborne epoxy systems have now proven their ability to replace or even outperform standard solvent borne technologies in many coating applications. They are thus ready to meet a growing global demand for environmentally benign product solutions, without compromising performances. The major routes for the growth of waterborne epoxy technologies are lower volatile organic compound (VOC) content both in binder and paint, and improved performance of coating formulations.

This presentation will focus on the newest developments and innovations targeting these directions, in order to identify the best performances possible with commercial and developmental products. How can we use binder design and paint formulation to push the limits regarding key demands such as fast dry, high flexibility, outstanding adhesion, chemical and long term corrosion resistance, as well as VOC reduction or elimination?

Key-words: VOC, epoxy, formulation.

[HOFFMANN MINERAL GmbH \(Germany\), Félix VICENTE MONDEJAR](#)

Cleanable low-gloss, interior emulsion paints: optimization of stain resistance

The ability to achieve a decorative appearance is one of the most sought-after and demanded characteristics of modern interior paints. Conventional, mostly low-gloss interior emulsion paints often have the disadvantage of having insufficient resistance to staining, since liquid stains are easily absorbed into the surface due to the high and often supercritical pigment volume concentration, and are therefore difficult to remove. As a result, reduced liquid and stain absorbency in the coating is a desirable quality for cleanable paints. This can be achieved by setting a suitably subcritical pigment volume concentration, which enables more homogeneous film formation and sealed, less absorbent coating films. In addition, the sensitivity to staining can be reduced by using hydrophobic or oleophobic additive components in the formulation.

Low-gloss, cleanable coatings must also have sufficient durability and wet-scrub resistance in order to ensure residue-free stain removal without removing the paint as well. In these kinds of paints, coarser and relatively hard fillers can help achieve better wear resistance in addition to the matting effect. Depending on the extent of mechanical cleaning, this is intended to counteract excessive paint removal, while also preventing changes to the surface's visual appearance such as streaking or polishing. This study builds on the principles of protection that have already been outlined. However, its primary aim is not just to achieve mechanical stability in the surface coating, but also to imbue the surface with improved resistance to staining in the first place using suitable fillers in order to keep the amount of cleaning required to a minimum.

With this in mind, is further optimization possible with selected functional fillers such as Neuburg Siliceous Earth in order to achieve surfaces that are easier to clean and can repel dirt with greater resistance to staining? The study examines this question in detail and takes into account other important characteristics of decorative interior coatings which have also been tested as part of the investigation.

Key-words: Cleanable, low-gloss, emulsion, aktisil sillitin.

[IFMAS \(France\), Charlotte LEMESLE](#)

Bio-based self-stratifying coatings

The objective of this study is to design novel bio-based multifunctional self-stratifying coatings. The concept of self-stratifying coatings is to bring the primer, intermediate and top coat properties together in a one-pot formulation. These coatings are based on partially incompatible thermosetting and thermoplastic polymers.

Both theoretical and experimental approaches have been considered and will be reported and confronted. Prediction of stratification was done using two models: (i) the “Hansen approach” deals with the solubility of the resins in a range of solvents; and (ii) a second theoretical approach based on interfacial tensions which takes into account the hardener and the substrate. Experimental films were characterized by SEM and X-ray analysis. A formulation involving a bio-based epoxy resin and silicone resin exhibited a stratification.

Key-words: Self-stratifying coating, polymer blend, bio-based epoxy resin, silicone resin.

[INSTITUT CHARLES GERHARDT, ENSC MONTPELLIER \(France\), Dr. Claire NEGRELL](#)

Fonctionnalisation de synthons biosourcés : construire l'avenir des revêtements polymères

Les nouvelles réglementations environnementales strictes nécessitent le développement de nouveaux revêtements pour la protection contre la corrosion qui soient plus respectueux de l'environnement. L'utilisation de revêtements à base de synthons biosourcés peut être une méthode alternative de protection des surfaces métalliques. Pour obtenir des bonnes propriétés anticorrosives, le revêtement doit avoir des propriétés adhésives, inhibitrices mais aussi barrières aux espèces corrosives. Le chitosane, polysaccharide naturel issu des carapaces des crustacés, et le cardanol, biophénol porteur d'une chaîne grasse insaturée issu de l'écorce de noix de cajou, sont tous deux des déchets verts. Leur modification chimique, notamment, par introduction de fonctions phosphorylées permet à ces synthons biosourcés d'être de bons agents d'adhésion sur les surfaces métalliques et de bons inhibiteurs de corrosion applicables dans des revêtements organiques.

Mots-clés : Chitosan, cardanol, phosphorylation, anti-corrosion.

[KONICA MINOLTA SENSING EUROPE B.V. \(France\), Jean-Jacques REGULE](#)

Qualité perçue : de nouvelles solutions pour une évaluation objective des finitions

L'apparence des surfaces peintes est d'une importance primordiale pour les entreprises de revêtement haut de gamme, la première impression perçue de la qualité d'un produit ayant un impact considérable sur la décision d'achat. La qualité des surfaces devrait donc être ressentie par le client comme attrayante, émotion influencée par la couleur mais aussi par la structure de la surface.

Les méthodes utilisées pour caractériser la perception visuelle sont extrêmement complexes et plutôt réservées aux experts. Habituellement ils interprètent des valeurs issues de plusieurs appareils comme un aspect visuel réel pouvant conduire à une communication ambiguë.

Afin d'obtenir une évaluation simple et objective de la qualité perçue d'une surface, et après plusieurs années de collaboration entre spécialistes Volkswagen AG, Audi AG et Rhopoint Instruments Ltd, nous vous proposons d'aborder la possibilité de prévoir la qualité de l'apparence à toutes les étapes de la fabrication, depuis le contrôle de l'état de surface du produit brut, jusqu'au produit fini.

Mots-clés : Apparence, perception, mesures.

[LANXESS \(France\), Coralie LAMBELIN](#)

Classification harmonisée et étiquetage du méthylisothiazolinone : un challenge pour la conservation en pot

Avec un dosage effectif du MIT généralement compris entre 50 et 200 ppm, l'implémentation légale du nouvel étiquetage H317 “ Peut provoquer une réaction allergique” et une Limite de Concentration Spécifique (SCL) $\geq 0.0015\%$ (15 ppm) va probablement résulter dans une substitution du MIT dans la plupart des applications. Sans MIT, des alternatives pertinentes procurant une efficacité sur le long terme et protégeant les articles traités contre une contamination par des micro-organismes doivent être trouvées.

LANXESS procure un soutien afin de comprendre les enjeux de cette nouvelle classification, ainsi qu'une assistance pour adapter les systèmes de conservations de pot en conséquence.

Nous pouvons d'ores et déjà proposer des formulations sans MIT basées sur des combinaisons d'isothiazolinones (BIT, CMIT/MIT, OIT), zinc pyrithione, bronopol et 1,2-dibromo-2,4-dicyanobutan (DBDCB).

Mots-clés : MIT, Etiquetage, santé humaine, environnement.

[OMNOVA \(France\), Christophe BAUDE](#)

New waterborne binder for masonry primer

Emulsified Binding System (E.B.S.) is unique technology that provides exceptional adhesion on porous and chalky substrates. Emulsions based on E.B.S. demonstrate their efficiency in penetrating substrate thanks to the polymer morphology and solubility.

After last E.B.S. launched successfully in 2010, Omnova Solutions discloses a new binder dedicated to penetrating and consolidating primers. Thanks to the effective work performed on this new waterborne resin, Volatile Organic Compound (V.O.C.) reduction allows to formulate primers for interior and exterior application that can fulfill requirements of Ecolabel. Polymer composition is also adjusted to optimize alkali resistance on fresh concrete and efflorescence resistance.

Key-words: Primer, consolidation, penetration, adhesion.

[OMYA \(France\), Eric CHETELAT](#)

CaCO₃ ou TiO₂ ?

Que ce soit en substitution partielle du dioxyde de titane ou en substitution totale, l'Omyabrite 100 X-OM offre une solution performante en opacité et en blancheur, facile à mettre en oeuvre et économique.

Mots-clés : Dioxyde de titane, carbonate de calcium, opacité, blancheur.

[ORION ENGINEERED CARBONS \(Germany\), Dr. Gabor BÖRZSÖNYI](#)

Specialty Carbon Blacks for Coatings

The carbon black properties will be discussed and the roles of each in determining the function of the carbon blacks in the coating applications will be surveyed. Different processes for producing carbon blacks will be highlighted and our company's carbon black portfolio will be introduced.

The second part of the presentation will focus on the latest developments our company is offering for the coatings industry. Particularly high jet-, conductive-, easy-to-disperse and natural resource based grades will be introduced along with technical data.

Key-words: high jet, conductive and easy-to-disperse grades, carbon black

[PONTIFICIA UNIVERSIDAD CATOLICA DEL PERU \(Peru\), Daniel Cristopher OBREGON](#)

Preparation and evaluation of paints fabricated from alkyd resin based on sacha inchi oil

Vegetable oils are invaluable raw material sources for the production of a wide variety of polymers in the paint industry. Sacha Inchi, a Peruvian vegetable oil, contains high amount of unsaturated fatty acids, becoming a potential renewable source for the production of alkyd resins with a high degree of cross-linking. In the present study, short and medium oil alkyd resins were synthesized based on Sacha Inchi and linseed oil, for comparison purposes. Eight different paint formulations were prepared with the obtained alkyd resins, with and without an inhibitor. Their anticorrosive performance, variation over time of the degree of rusting and blistering, was evaluated by salt spray accelerated test in accordance with ASTM standards. Medium oil alkyd paints had the best anticorrosive behavior. Both paints based on Sacha inchi and linseed medium oil alkyd resins presented an equivalent performance in the accelerated corrosion test.

Key-words: Alkyd resin, anticorrosion, sacha inchi oil.

[RHEOMODAL \(France\) Dr. Alain HILL](#)

Rhéologie appliquée à l'industrie des revêtements

L'écoulement de la matière a des conséquences sur bon nombre de propriétés d'usage car si le revêtement n'est pas déposé où il faut et en quantité suffisante, la performance n'est pas atteinte.

Ne fittez plus vos rhéogrammes avec des modèles, utilisez plutôt vos viscosimètres et rhéomètres comme des outils d'application. Les fondamentaux de l'approche rhéologique pragmatique sont donnés, les types d'équipements à choisir ainsi que les tests majeurs à réaliser.

En plus de la corrélation Rhéologie/Usage, une démarche R&D est proposée, cette dernière permet d'optimiser vos formulations, et même de designer vos nouvelles molécules en réduisant le temps pris au client pour les tester.

Le temps de développement en interne est aussi plus court car la démarche Trial&Error est réduite.

Mots-clés : Rhéologie, écoulement, appareil, formulation.

[RHEONOVA \(France\), Dr. Jérémy PATARIN](#)

Maitrise des procédés d'enduction anciens et nouveaux : rôle de la rhéologie dans la formulation des produits

Les processus d'enduction sont aujourd'hui connus et la formulation s'est bien adaptée pour contrôler la qualité des épaisseurs couchées. L'apparition des défauts potentiels a été réduite avec le temps : piqure, gouttes, bulles, stries, coulures,... Les processus les plus sûrs sont les enductions au couteau, aux rouleaux et l'extrusion-couchage. Les plus difficiles à appréhender sont le rideau, les sprays, les jets et plus récemment l'impression 3D et l'électrospinning. Les procédés impliquant les niveaux de cisaillement (vitesse divisée par l'épaisseur) les plus importants sont souvent les plus complexes à régler : les taux de cisaillement varient fortement et la rhéologie des formules, quel que soit leur niveau de viscosité. Un enjeu important est donc d'adapter des formules existantes et de créer des nouvelles formules pour s'adapter à ces procédés techniques.

Mots-clés : Rhéologie, formulation, cisaillement.

[SILTECH EUROPE \(France\), Robert RUCKLE](#)

Development of innovative silicones molecules with double organo functions for coatings

A new class of di-acrylate functional urethane silicone hybrid polymers have been synthesized providing UV curable polymers. These new polymers are evaluated in several UV cured coatings systems for their physical and mechanical properties. The new materials generally provide more elongation, increased toughness and flexibility when compared to the acrylated silicone polymers alone.

In condensation cured systems, reactive silicones provide up to 300 % elongation, but in energy cured acrylate systems, the reactive silicones typically give low elongation of around 5%. The new materials have shown elongation as high as 45% in UV cured systems.

Key-words: Silicones, cured systems.

[SIXENSE-Iprs \(France\), Dr. Céline MERLATTI](#)

Influence des contaminants de surface sur les performances des revêtements peintures

La qualité de la préparation de surface des supports avant mise en peinture est un paramètre clé de l'efficacité et de la pérennité d'un système de revêtement peinture. Lors des opérations de mise en peinture, les méthodes de préparation de surface, les conditions climatiques, la co-activité sur chantier... peuvent entraîner une modification des caractéristiques et des propriétés de surface des supports acier et béton. Les sources de contamination peuvent être internes, donc déjà présentes sur le support avant préparation de surface ; ou externes, venant se déposer après la préparation de surface. Avant toute application d'une couche de peinture ou d'un revêtement, il est donc nécessaire de s'assurer que le support est exempt de contaminants.

Au cours de l'exposé, SIXENSE-Iprs, société d'ingénierie spécialisée dans la protection des aciers et bétons depuis plus de 20 ans, propose de recenser les contaminants les plus courants, les méthodes de contrôles pouvant être utilisées et la conséquence de la présence de contaminants résiduels sur la pérennité du système de protection anticorrosion. L'influence de l'humidité résiduelle des supports en béton sera notamment abordée.

Mots-clés : Contaminant, préparation de surface, anticorrosion.

[SYNTHOPOL CHEMIE \(Germany\), Rolf SIMON](#)

New fire retardant PU-binder - invisible – but very effective

The new PUD is a typical waterborne PU-Dispersion, hard but flexible and chemical resistant as well as for 1pack and even more for 2pack.

Due to an incorporated flame retardant monomer the PUD shows an excellent behaviour in case of a flame disaster.

The applied film is absolutely transparent. Therefore we see the field of an application on organic substrates like wood and on textiles of public buildings.

We will present examples of applications with impressive comparison results of this PU-Dispersion.

Key-words: Fire retardant, DOPO.

WACKER CHEMIE AG (Germany), Lenine DE SOUSA GOMES

Vinnapas® VAE technology for low-odor emulsion paints

Over the last decades, vinyl acetate- ethylene (VAE) polymer technology has proven to be an excellent choice as binder in modern indoor paints, achieving high standards in performance as well as complying with most strict environmental requirements set by different eco-labels in Europe. The selection of the right raw materials plays an important role in the formulation of low-odor paints. VAE-based binders contribute significantly to the reduction of odor in paints because no coalescing agent is needed in the final formulation. Guide formulations were elaborated using an evaluation plan developed in our laboratories, considering both smell tests and VOC emissions tests. A benchmark with paints from the market will also be presented as part of the study.

Key-words: Odor, formulation, legislation, VOC.

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