ATIPIC / NVVT STUDY – DAY

NEW TOOLS FOR COATINGS TECHNOLOGY
(production, application, testing and HTE)

MARCH 21th, 2012

Welcome / registration	:	9h00
Start of sessions	:	10h00
End of sessions	:	17h00

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BELGIUM

PROGRAMME

09h00 **Welcome**

09h50 **Session Opening by Hugues Dedeurwaerder, President ATIPIC**

10h00 **HTE at Nuplex Resins : from monomer to resin and proper paint formulation**
P. vd Berg and Dr. J.M . Akkerman : Nuplex Resins. (NL)

In the process of development of polymers for paint, called resins, a long route from monomers via the actual resin to a proper paint formulation is followed. Nuplex Resins uses both HTE polymerization and HTE paint formulation to shorten this long route. Both machines are discussed with regard to configuration, specific output, effectiveness and efficiency. An example of integral HTE synthesis and paint formulation in one project will be discussed.

10h40 **Speeding up the development of your paints**
Johan Paul Pieter Castelein - Flamac, a division of SIM (BE)

For a few years now, high throughput methodologies have been applied to formulation and coating research. For a number of reasons, formulation and coating research is well suited for the application of high throughput technologies. Additionally, many formulations and coatings have short product cycles, which increase the need for new developments and shorter commercialization periods.In this paper, we present several automated workflows for the formulation, application and testing of paints. These can provide a competitive advantage by accelerating drastically the rate of innovation for a wide range of applications. Finally, some case studies will be presented.

10h55 **Coffee break**

11h20 **Induction and Dispersion of Powder into Liquids in the Lacquer, Paint and Ink Production**
Dr.-Ing. Hans-Joachim Jacob - ystral gmbh maschinenbau + processtechnik

In the production of lacquers, paints, inks and coatings huge amounts of powder materials have to be added and dispersed into liquids. Ystral provides a technology which is different from all other technologies available on the market. The main advantages against the dissolver technology are:
- Reduction of production costs to below 10 %
- Reduction of production times to below 20%
- Reduction of energy costs to below 30%
- Production with 40% of the operators 4 times more product
- Minimum space requirement
- Higher quality
- Higher Flexibility
- All viscosity ranges – not only in high viscosities
- Higher safety for the operators

With the ystral Conti-TDS the powder is inducted into the liquid using a strong self priming dispersing machine. Instantly when the powder gets in contact with the liquid it is dispersed two times under high shear and strong vacuum. With this method the achieved particle size distributions are smaller, much more narrow and much better reproducible

12h00 **Lunch**

14h00 **A new approach to develop color system solutions using THE.**
Andreas Stuettgen, Erik Luidens, Evonik Colortrend B.V. (NL)

The increasing environmental, legislative and competitive pressure is a challenge for every colorant and coatings formulator. Several classical raw materials used in colorants are nowadays restricted or being consolidate requiring ongoing reformulation of the existing products. At the same time customers are asking for innovative colorants and color solutions. For the development of color systems, time to market plays a key role. In order to fulfill all these needs, additional resources are

required. This paper describes, how a new High Throughput Experimentation (HTE) system was designed and implemented, for the first time, to develop new colorants and color system solutions.

14h40 **UV-LED – A new light curing source for the printing and coating industry.**
Mr Oliver Starzmann – IST Metz (DE)

UV-LED's are considered as innovative and trend-setting light source for curing of coatings, inks and adhesives. As introduction, the lecture describes in an overview the actual applications of LED technology and explains in general LED / UV-LED's working mechanism. Additional to the well-known advantages of UV-technology follows an explanation what makes UV-LED especially attractive to the users. As examples we can indicate the monochromatic and cold light and the ability to switch on / off the UV-LED's immediately. Afterwards the established UV-LED's application fields are discussed, as well as the principle technical design with all needed components like lamp head, switch and control unit and chiller unit. The main part of the lecture will be a comparison between a "conventional" UV-system and an UV-LED-system which names the advantages of UV-LED's as well as the existing limitations. Finally follows a short outlook on possible further applications
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15h20 **Coffee Break**

15h40 **NITROTHERMSPRAY: a novel high performance spraying method, through the use of heated nitrogen**
Dr.Iacopo Galli -Epidoris (F)

The use of heated nitrogen as carrier gas for paints and varnishes spraying, is a novel, innovative method that brings great performance enhancement. Thanks to heated nitrogen, used as a fluid carrier, this system allows the lowering of product's viscosity, and therefore the pression needed to spray it (overspray effect reduction). The temperature of nitrogen, an inert, anhydrous and clean gas, is set by the operator, and is essential in order to create the same painting conditions in any climatic environment. With NITROTHERMSPRAY it is possible to use very dense and viscous industrial products with very little dilutions (VOC emissions reduction). The control of the key physical and chemical parameters during the spray applications brings great advantages in term of quality, reproducibility, support's durability, VOC emissions and nonetheless economic savings. The integration of NITROTHERMSPRAY machines is possible with all kind of painting installations.

16h20 **Throughput increase of paint stability testing by centrifugal acceleration combined with multisample approach.**
Prof. Dr. Dietmar Lerche- L.U.M. GmbH (DE)

Fast analytical stability testing is important for an efficient design of new or improved paint products as well as for preshipping QC. Stability issues of paints and related products are of complex nature and destabilization may occur during processing, storage and use. Most often development and processing has to deal with phase separation (syneresis), agglomeration or flocculation, pigment or particle segregation, etc.. Numerous ISO, ASTM or company standards are in daily use in industry. But nevertheless there is a need of fast and reliable analytical test for efficient design of new or improved paint products. This paper focuses on an establishing new technique of accelerated stability testing, which is based on in situ visualisation of separation phenomena. The underlying sedimentation or creaming velocities are not only depending on density differences between the dispersed and continues phase, particle size distribution, viscosity of continues phase and particle volume concentration but it is governed strongly by coalescence, agglomeration, flocculation, particle network formation and consolidation behaviour.
In the first part of this paper we describe our measuring technique of stability assessment of dispersions and particle characterisation and in the second part we discuss typical applications to quantify syneresis, pigment segregation as well as particle size distributions and particle-particle interactions for different paint or paint related products.

17h00 **Final discussion and Drink**

REGISTRATION FEES : VAT included

NVVT/ATIPIC members : 100,00 €
Nonmembers : 140,00 €
Retired and students : 50,00 €
Speakers : free

The cash payment has to be done at the entrance of the conference room.
For practical reasons neither cheques nor credit cards will be accepted.

REGISTRATIONS

Registrations are to be made at the latest by March 16th by mail to info@atipic.be
Or by filling in the registration form on line at www.atipic.be, tab agenda
Or by fax at : + 32 (0)2 534 33 95.

Both ATIPIC and NVVT-managements are looking forward to meet you on March 21th, 2012!

LOCATION

E10 Hoeve, Kapelstraat 8a, B 2960 BRECHT
Website : http//www.e10hoeve.be
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From Antwerp to Breda
Motorway E19 Antwerpen-Breda exit 3 Brecht, direction village, at the traffic lights turn to the right in direction ofMerksem and after about 1,5 km turn right again and you'll see the E 10 Hoeve on the left side.

From Breda to Antwerp

Motorway E19 Breda-Antwerp exit 4 Sint Job-in't-Goor. After exit, drive left direction Wuustwezel-Essen. After 1,5 km turn to the right. Follow this route for about 5 km. After crossing the highway you'll see the E 10 Hoeve at your right side.