



# FLAAR Lecture Abstracts

Dr. Nicholas Hellmuth

February 2007

## SUMMARY OF A UV-CURABLE FLATBED PRINTER SEMINAR

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SUCCESSFULLY HELD IN CINCINNATI,  
JANUARY 2007

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## Summary of a UV-Curable Flatbed Printer Seminar Successfully held in Cincinnati, January 2007

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**J**anuary 18 and 19, 2007 a successful UV-cured flatbed printer Open House was held at Resource Imaging Supply, Cincinnati.

The show was organized by the staff of Resource Imaging Supply and Queen City (two related companies sharing the same building).

Several key tech support and sales management people from MacDermid ColorSpan were also on hand to give live demonstrations.

**Here are some photos of the other equipment that was available, a Canon iPF 9000, an impressive Mimaki JV5, and other equipment.**

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Canon iPF 9000



Mimaki JV5

## **A Workshop Implies having Printers available to inspect in person**

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A seminar is when a speaker discusses a concept or process but does not actually have the equipment at hand. So the day-long program in Korea was a seminar. This has the advantage of no costs of shipping and setting up equipment, tech support, operators, etc.

The other benefit of a seminar is that you can concentrate on presenting information in a manner that everyone in the room gets the same level of information.

A Workshop means that actual UV-curing inkjet printers are present. So at the Athens/Greece workshop there was a ColorSpan 72UV printer (and a d-Gen textile printer and a Roland eco-solvent machine). At this Cincinnati Workshop there were two UV printers (9840uv and 72UVX) as well as several solvent and other printers. All were operational though 99% of the attention was on the UV machines, mostly on the impressive 9840uv.

In the future I see benefits of both Workshops, Seminars, and individual Lectures. For many venues, such as a busy trade show, most people have time only for one single lecture. Indeed it is worth pointing out that the audience for the Korea Seminar, over 100 people, was relatively large. At many trade shows there is so much going on around the trade show floor that it's hard for people to remember to move to the lecture area for a PowerPoint.

The Seminar was effective because I was able to impart essential information the entire day. If a printer had been present this would have conflicted with the time available for the PowerPoint presentations. But for the Cincinnati Workshop, the original intent was two 90-minute lectures and the rest was always planned for actual operation of the printers. Again, each kind of program has its pros and cons. FLAAR is able to serve whichever kind of presentation the sponsors prefer. We can also give a 2-day workshop too (the event in Athens was three days; we prefer to concentrate things into two days).

**Here are some images of the ColorSpan 72UV**



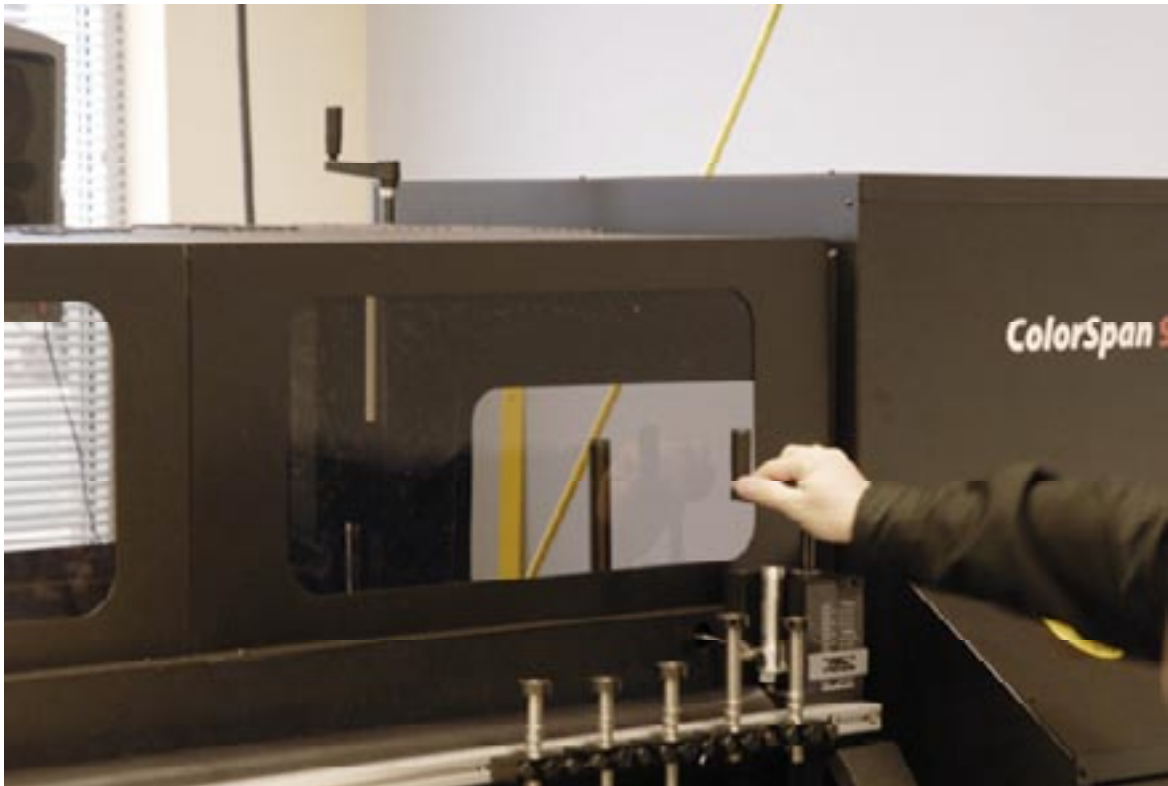
**Here are some images of the ColorSpan 72UV**

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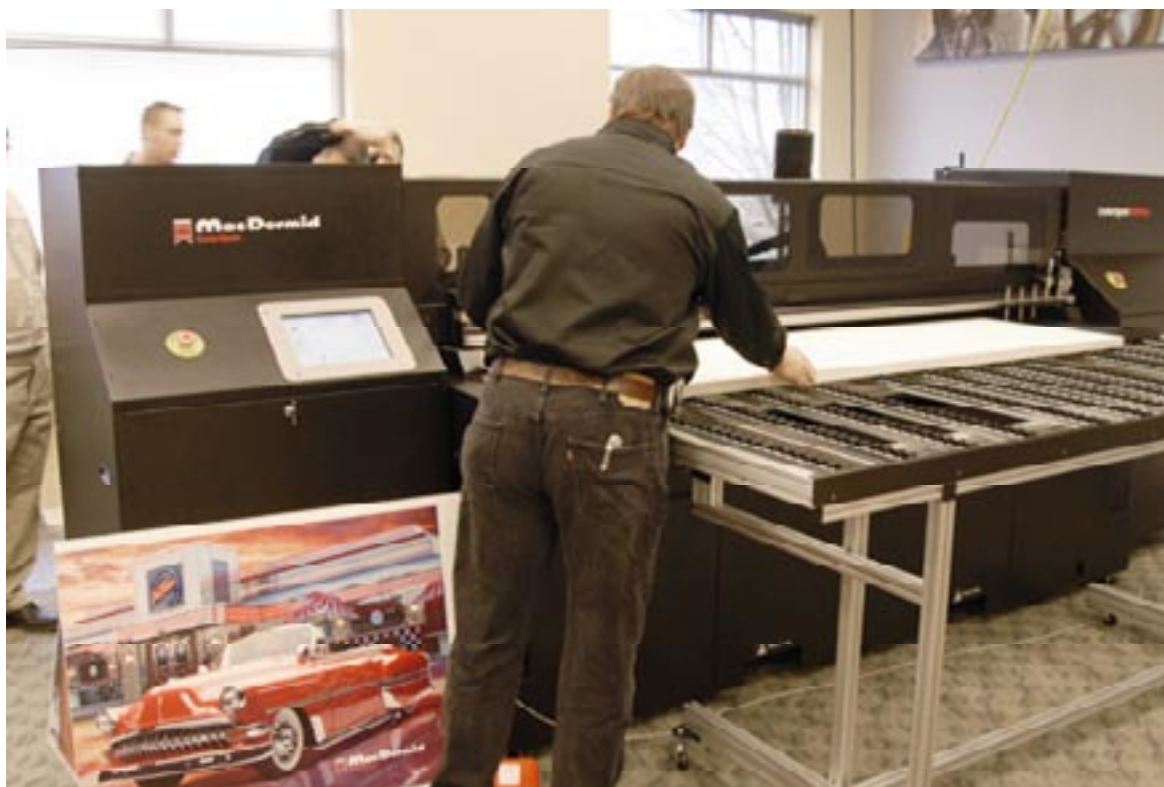


**Here is the ColorSpan 9840uv at work on diverse and often unusual materials.**

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**ColorSpan 9840uv printer at work**





**And here are the lecture presentations by Dr Nicholas Hellmuth, FLAAR**





## How to Determine the Right UV-Flatbed Printer for Your Needs

**Dr Nicholas Hellmuth**  
President, FLAAR

**Director**  
Large Format Digital Imaging Division  
Bowling Green State University, Ohio

Prepared for Sign Resource Supply, Cincinnati, OH



# Printing on Stone, Wood, Concrete...



Dr. Nicholas Hellmuth  
FLAAR Digital Imaging Resource Center

Director,  
Large Format Digital Imaging Division, Center for  
Applied Technology,  
Bowling Green State University





## UV-Cured Flatbed Inkjet Printer Seminar

### A Photo Essay on a Recent UV Seminar

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**Dr. Nicholas Hellmuth**

## UV-Cured Flatbed Inkjet Printer Seminar A Photo Essay on a Recent UV Seminar

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**J**aeHyun Tech Co., Ltd and Digital Printing Magazine sponsored an educational seminar on UV flatbed printers at COEX, Seoul, Korea. Dr Nicholas Hellmuth, FLAAR, provided six informative hours on UV-curing printing applications.

Several weeks were dedicated to preparation for these PowerPoint presentations. Dr Hellmuth undertook a series of site-visit case studies

- A successful sign shop in Nashville that had two Gandinnovations solvent printers, including the remarkable “frontlit/backlit two-sided alignment camera.” They also had just installed a Gandinnovations flatbed Jeti UV printer.
- An innovative sign shop south of Nashville that had a Gandinnovations solvent printer dedicated primarily to printing on fabrics for soft-signage. They had recently ordered a UV flatbed printer but it had not yet arrived.
- In order to learn more about flatbed materials for UV-cured inks, we also visited a large digital print shop in Toronto that had an Inca Eagle H and a Durst Rho 600 (as well as a DuPont Artristri for textiles).
- We then did research at two printshops with ColorSpan UV printers: a 72UVX in Toledo and a ColorSpan 9840UV in Chicago. That’s because both of them printed on flat materials that can also be printed upon with a Jeti machine. In any public presentation it’s crucial to cover all the different technologies.
- The final preparation was to spend two days at the Gandinnovations factory in Toronto. This visit made it possible to add photographs to the PowerPoint presentation on a variety of aspects relative to innovative applications.

All this advance effort and travel costs were well invested because over 100 people showed up for the seminar. Indeed by the time of the second hour, they had to add extra chairs at the back to hold the people coming in.







*The fact that so many people left their busy jobs and came to listen to comprehensive coverage of UV printing demonstrated several things:*

*First, that both JaeHyun Tech Co., Ltd and Digital Printing Magazine had been successful in all their organization to announce and prepare the venue.*

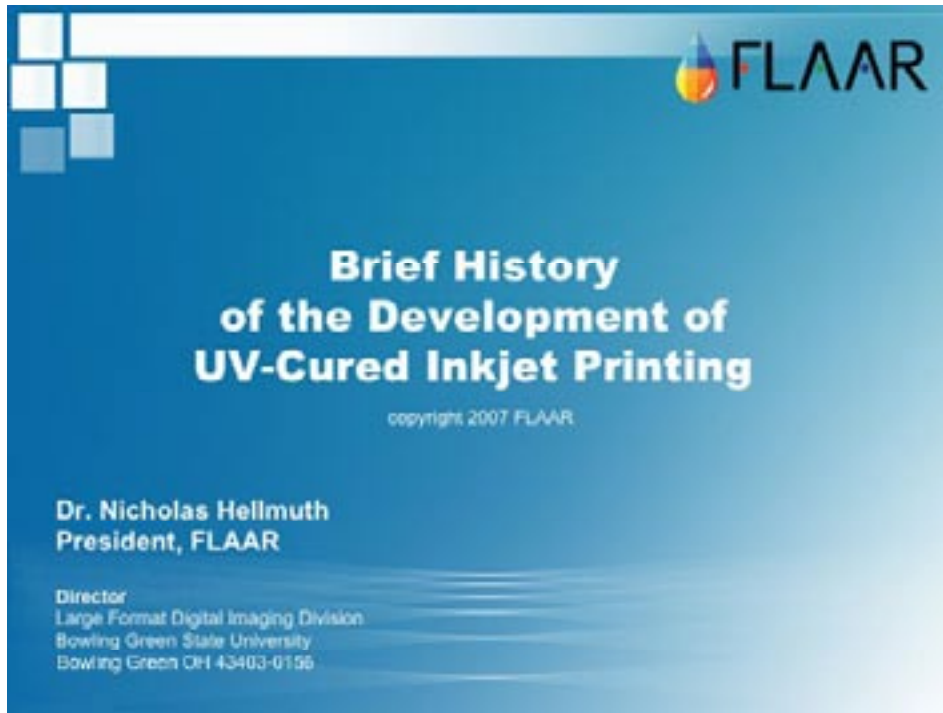
*Second, that although today there are only a few UV printers in Korea, that printshops clearly are interested in learning about this technology so that they can decide when to move into UV-cured inkjet.*

*The excellent attendance at this event suggests that this kind of event should be organized in other countries, and at other times and places in Korea as well.*



**Here are the five Lectures That were Presented During this Seminar**

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## UV Lamp Technology

Dr Nicholas Hellmuth  
President, FLAAR

Director  
Large Format Digital Imaging Division  
Bowling Green State University, Ohio

Prepared for JaeHyun Tech Co., Ltd.



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## How to Determine the Right UV-Flatbed Printer for Your Needs

Dr Nicholas Hellmuth  
President, FLAAR

Director  
Large Format Digital Imaging Division  
Bowling Green State University, Ohio

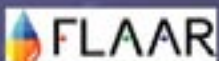
Prepared for JaeHyun Tech Co., Ltd.



## All Dedicated Flatbed UV Curable Inkjet Printers Comparative Evaluations & Review of Pros and Cons

Dr. Nicholas Hellmuth  
FLAAR Digital Imaging Resource Center

Director,  
Large Format Digital Imaging Division,  
Center for Applied Technology,  
Bowling Green State University



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# UV-curable Flatbed Inkjet Printer Workshop

Including Inkjet Textile Printing & Eco-Solvent Printing

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## **FLAAR Report on the 3-Day International UV-Workshop, Athens, Greece**

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This first workshop featured the following kinds of instruction during 24-26 March, 2006:

- Traditional lectures in a regular lecture hall format (organized by Materia Grigia)
- Informal lectures directly in front of the UV printer (organized by FLAAR)
- Question-and-answer sessions on UV, solvent, textiles (organized by FLAAR)

This UV-Workshop concept of using UV printers to build a complete structure was implemented by Materia Grigia. They have prior experience organizing trade shows, educational events, and workshops. Materia Grigia, personified by Kostantina & Maurizio Tumidei, provide coverage of visual communications for Greece, the growing economies of the adjacent Balkan region, and also for Italy.

FLAAR comes from a university background, where teaching, including conferences, seminars, and workshops is part of our tradition. For an upcoming second-generation workshop concept, FLAAR suggests adding

- Hands-on printing (for those who wish to do this)
- Hands-on use of RIP software as preparation for color management
- Hands-on ICC color profiles for color management
- Hands-on finishing (trimming, lamination, mounting, when the equipment is available)

Although this unique event in Athens was correctly labeled as a “UV Workshop” the inclusion of solvent printers and textiles was a good idea. Many people are nervous about how soon solvent ink technology will be “out.” We can reassure them that both solvent and UV are viable technologies for today, and tomorrow, especially since with each new year so many new solvent ink printers will be introduced (the new Roland AJ-1000 and the new Mimaki JV5, among others).

## **International Interest**

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People came from more than four neighboring countries: Bulgaria, Rumania, Turkey, and Albania (as well as print shop owners from Monaco, Belgium, and elsewhere). So clearly there is a need for this kind of UV program (which is not available in any of these countries).

## Textile Component

FLAAR has a long-range interest in textiles. Since d-Gen textile printers were available through the sponsor, Atlas SA, it was logical that a textile component was part of the program.

The advantage of the textile component was that it attracted a wider range of print shop owner, manager, and machine operator. The disadvantage is that it is complex to simultaneously organize a textile printing training session and a UV-printing training session. For example, the preparation for the Korea UV seminar took weeks, including site-visit case studies to gather documentation as well as photographs to feature in the PowerPoint presentations.

Nowadays there is so much to learn about UV-curing wide format inkjet printing that a textile component is distracting. In the future, a textile printer should be included in a UV-workshop, if possible, but printing on textiles is a valid theme for it's own one-day conference that could be separate. A textile conference (which FLAAR is interested in co-organizing with other groups) should include:

- Dye-sublimation textile printing
- Direct printing on textiles with acid dye and reactive dye inks
- Direct printing on textiles with solvent ink printers
- Direct printing on textiles with UV-curing inks.

We are taking training on a d-Gen printer that was recently installed near the FLAAR offices. Several weeks ago we took training on solvent printing on Ikena-brand textiles (from Germany). So we have material for these lectures from these recent site-visit case studies as well as from the previous seven years of trade show visits.



## Screen Printing Focus

The Matera Grigia UV Workshop concept included screen printing with UV-curable inks. Since FLAAR is a research institute dedicated exclusively to digital imaging and digital printing, this present FLAAR Reports covers primarily the inkjet aspect of the Athens event. The screen printing aspect was handled by Maurizio Tumidei, with lectures by Michel Caza and his colleagues.

Michel Caza is past president of FESPA and on their Board of Directors. He is a popular speaker on UV-cured screen printing inks. FESPA is, to some degree, the European equivalent of SGIA in the US. Both associations have witnessed their screen printing members having to come to terms with the reality of digital flatbed inkjet printers. Indeed the owners, managers, and printer operators of screen presses are the largest single category of people who need to learn about UV flatbed inkjet printer technology.

The advantage of having sessions on screen printing was that owners, managers, and operators of screen printing equipment are precisely the people who realize they need to buy flatbed UV printers. Inkjet printing technology is a bit confusing for screen printing owners, so a seminar is an excellent idea. However teaching screen printing with UV inks and teaching UV printing with digital wide format printers should be two totally separate events. They can be back to back but not held both in the same time and place (too difficult for the attendees to decide which of the two competing programs to attend).



## Suggestions for the Future

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The overall program needs to be securely funded from the start so that all expenses can actually be paid. The advantage in having a printer distributor, dealer, and/or manufacturer as organizer is that they also have an incentive to make things happen on time. The counter advantage in having an outside entity as the organizer (someone other than, or in addition to, a distributor) is to have a more independent perspective. Each kind of organization has advantages and a few drawbacks.

The program in Korea had two co-sponsors: a leading trade magazine and a major distributor. This is probably the best of both worlds.

The program in Cincinnati had one regional dealer as sponsor and drew primarily from a 150 mile radius. There was no trade magazine partnership.

The program in Greece drew from the entire Balkan area and from elsewhere in Western Europe as well. A major dealer was a sponsor, but not a co-organizer.

The program in Korea drew primarily from Seoul, but also from other cities. Seemingly both the distributor and trade magazine were co-organizers. In any event, whoever did the organization for the Korea event was very successful: over 100 people attended. I noticed they were attentively taking notes as well. The reason for the good attendance was that a major national trade magazine was involved: a substantial glossy-paper magazine.

I would also recommend refining the overall program to make it two days; three days is tough for today's busy executive or manager. One day is also a viable alternative. But FLAAR does have lecture topics for a full two-day program.

## Cooperating with FLAAR for UV Seminars, Workshops or Lectures in your city

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If you wish to start a wide-format inkjet printing program to include Dr Nicholas Hellmuth, be sure to send a copy of your request for a workshop to FLAAR fax (USA) 419 372 8283.

If you wish to have a UV Course or UV Workshop for the US, Canada, Latin America, Asia and Europe, contact FLAAR, fax (USA) 419 372 8283. We can deliver the lectures auf Deutsch, en Español, or in English. All other languages can easily be simultaneously translated.

If you prefer a single lecture, or short group of lectures (rather than an entire course or workshop), Dr Nicholas Hellmuth is available also. Download the attached PDF from the free download pages of [www.large-format-printers.org](http://www.large-format-printers.org) or the free download page of [www.wide-format-printers.NET](http://www.wide-format-printers.NET). The download of these lecture abstracts is free.

We can also provide lectures, seminars, and workshops on giclee and fine art photography, and digital photography.

## FLAAR also provides consulting services worldwide

FLAAR also provides consulting services worldwide in UV-curable inkjet printers. We can also provide consulting, combined with a UV-course, personally customized for you and your own company, anywhere in the world. It can be simultaneously translated or delivered en español or auf Deutsch.

FLAAR also offers courses and consulting in giclee, fine art photography, décor, digital photography, and scanning. Contact us by fax and explain which subjects you would like us to cover.

We can provide training in color management as well, especially in the US, Canada, and Latin America. If you are in Europe, however, we recommend you consider hiring FLAAR together with local European specialists in color management. There are two individuals that we could recommend.



*Angela Papadopoulou gives a presentation of the benefits of the Roland eco-solvent printer. She is Technical Support Manager for Atlas S.A., the leading digital output experts in Athens and neighboring countries.*

*Notice that here the attendees have broken up into an informal group. Each person could opt to attend the specific lectures that they wanted to (and could skip whatever they did not want to attend).*





*On the subject of choice, here are groups attending the lectures of Michel Caza, a member of the Board of Directors and past President of FESPA. FESPA is the European equivalent of SGIA. Like SGIA it is evolving from being primarily a format for screen printers into helping screen printers transition into the digital world of inkjet printers so that they can survive the competition from digital print shops in their area.*

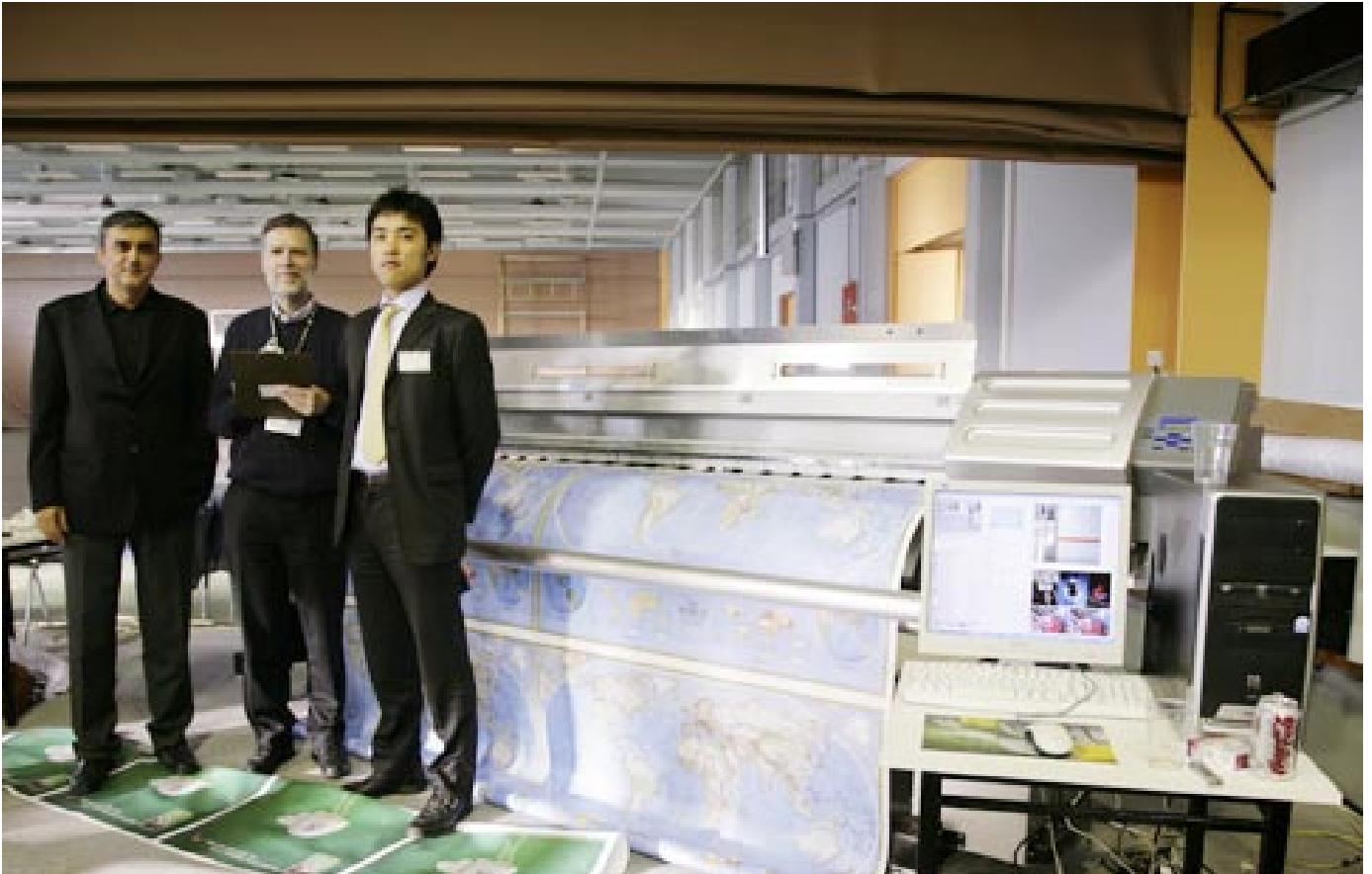
*Caza also gave lectures on the health and other benefits of switching from carcinogenic solvent-based screen inks to less health-damaging UV-based screen inks. Since the same transition is going on within digital printing (from solvent inks to UV-curable inks) it makes good sense to have both screenprinting and digital printing covered in the same venue.*

*However people could opt whether to concentrate exclusively on inkjet printing, or take both screen printing plus inkjet, or just stick with the workshop portion on screen printing.*

*For future programs (for your company, institute, university, or printing association), you can select an UV-inkjet-only program (delivered by Dr Nicholas Hellmuth and colleagues) or a joint UV-inkjet+UV-screenprinting program (in which case you will want both Nicholas Hellmuth and Michel Caza). If you prefer a program exclusively in UV-screenprinting, then you should contact Michel Caza directly.*



The lectures moved from one kind of printer to another. In the foreground is the d-gen textile printer. In the background you can see that everyone has moved to discuss the ColorSpan UV flatbed and the adjacent Roland eco-solvent printer.



*Since FLAAR has no Roland printers among the 23 printers that we use, and as there were at that time no Roland printers near our offices in Guatemala, this entire workshop was an informative opportunity to catch up on the new third-generation EcoSol Max ink. Here you see Vassilis Psaridis (Atlas S.A.), Nicholas Hellmuth (FLAAR at BGSU), and Yosuke Yagi (Roland in Europe).*

*Each exhibitor had the opportunity to introduce themselves and their products. Here Yosuke Yagi discusses Roland eco-solvent printers.*



*More than 50 different models of UV-curable inkjet printers are available to choose from. More than 30 companies manufacture UV-cured inkjet printing equipment. So it helps to acquire first hand experience in a workshop of this nature. Since ColorSpan is the #1 selling UV-curable inkjet printer around the world, this is a logical printer to feature at the event.*

*But we noted that of the people attending, and whom we met during our stay in Greece, that one had just ordered a Vutek UV printer; another had already purchased a Luescher UV flatbed: a million-dollar investment. So in the future we hope to have more interaction during the workshop with quarter-million dollar and \$300,000 UV printers also, since the people attending this workshop came from all ages and diverse backgrounds.*

*Most of the people in the audience was either thinking of buying a printer within the next year, or had just recently ordered one.*

*In these photographs, Adonis Granis (of Colour Consulting Group, [www.CCG.gr](http://www.CCG.gr)) discusses color management, both the measuring tools and the software.*



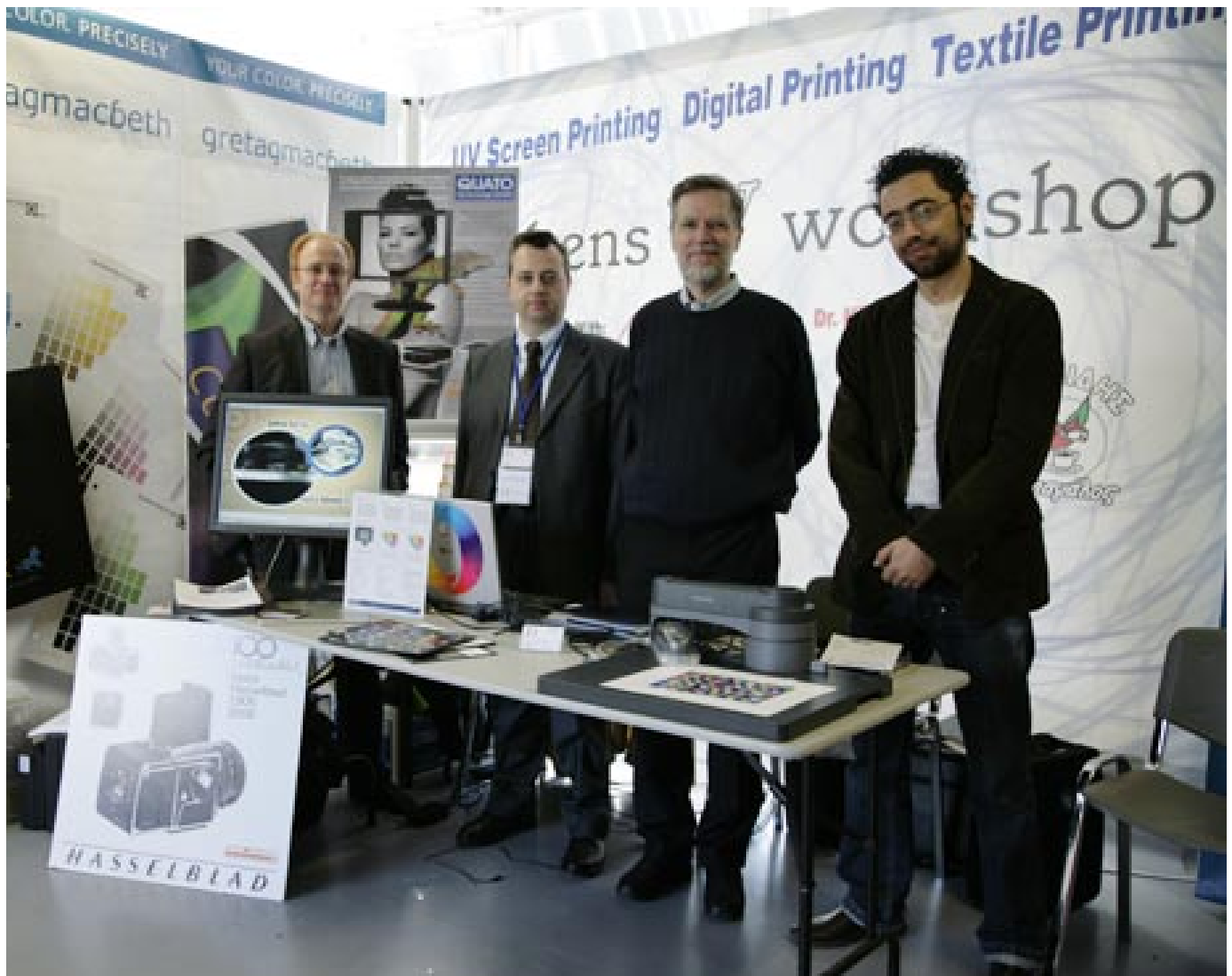
*A color management specialist from Italy, Luca Tubbini, provided a general introduction in a comfortable sit-down format. Then later we had several additional color management learning sessions.*



*We organized the color management discussions to be on the introductory level, to help people ease into this theme. There were plenty of highly qualified, skilled, and experienced color management people to assist: here Mr Granis and Mr Lambru.*

*Please realize that a full program in color management is usually two to three days, intensely, pure color management. Rather than this, in the UV workshop we provide a general introduction, basic facts, show you all the tools and software, and this way you can decide how, in the future, you might wish to go further into color management. Many print shops and printer operators have worked for years with no ICC profiles whatsoever. But at least it helps to have a general overview of all this.*

*Besides, most books, manuals, and reviews of color management forget to introduce the RIP software that gets you started. In our workshop we include discussions of RIP software (Raster Image Processor): what it is, why it can help you, and which brand(s) are recommended.*



*This is the booth for color management (from GretagMachbeth), color manageable monitors, and Hasselblad cameras. In the top photo that's Sakis Mylonas, Nikos Lambru, Nicholas, and Adonis Granis (specialist in color management and giclee printing). Mr Granis gave several of the color management presentations, as did Nikos Lambru.*

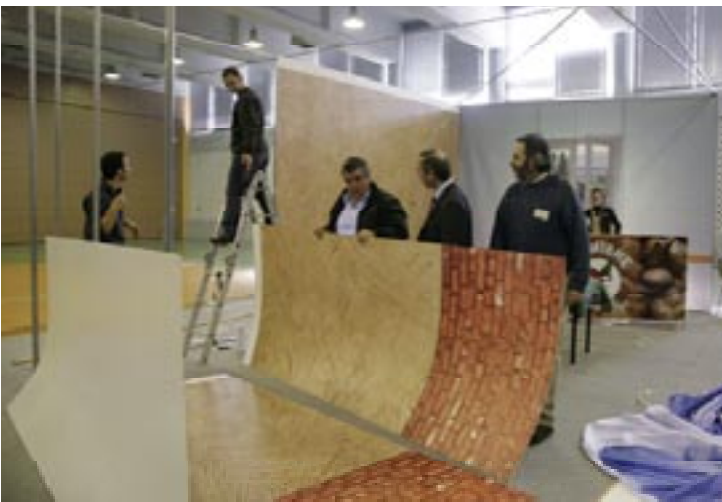


*The nice part about the overall format was that the lectures, workshop, teaching, learning, and question-and-answer aspect took precedence over the “trade show” portion. The trade show booths were available*

- *At the beginning of the day*
- *During all breaks*
- *During lunch*
- *In the evening when all the lectures and workshop for the day were over.*

*At the giant national and international trade shows, the booths absorb everyone, and the lecture programs are only sporadically attended. With a workshop format, education takes precedence.*





*The innovative portion of this program was the construction of a sample coffee shop (coffee bar, sort of like Starbucks, but Greek style). Everything was printed during the workshop. Unfortunately the printing did not start early enough and the structure did not get finished, but the idea was very clever. Evidently other workshops have used this idea before.*



*Here is the coffee bar almost completed. The ceiling is printed with the d-gen textile printer (a modified Roland).*

*The walls were all printed on a ColorSpan 72UVR.*

*The café waitress was photographed with a Canon EOS 5D camera by Nicholas Hellmuth and printed with eco-solvent EcoMax inks on a Roland Pro II V printer.*

*D-gen is a leading European company that specializes in dye-sublimation printing on textiles. D-gen exhibits at most of the leading European trade shows, but not in the US. The market for digital printing on textiles is much more advanced in Europe, and trade shows in Germany, Italy, and Turkey are filled with various manufacturers all offering their solutions for printing on textiles.*

*All the wide format printers were provided courtesy of Atlas, S.A., Vassilis Psaridis, Managing Director.*

## Acknowledgements

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### Summary of a UV-Curable Flatbed Printer Seminar Successfully held in Cincinnati, January 2007

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- Scott Okrasinski - President Resource Imaging & Supply
- Granden Griswold - Director & Team Leader of Graphic Equipment & Supplies
- Jeff Bianchini - Color Graphic Supply Product Line Manager
- Rolf Metzger - Graphic Equipment & Supply Specialist
- Benjy Weisenburgh - Graphic Equipment & Supply Specialist

And others at Resource Imaging Supply made this a success.

The participants from MacDermid ColorSpan were

- Scott Heise - District Sales Manager
- Gary Ferree - National Sales Manager
- Peter Merck - Senior Field Engineer

For further information on Resource Imaging Supply, their phone is 513 326-2300.

### UV-Curable Flatbed Inkjet Printer Workshop Including Inkjet Textile Printing & Eco-Solvent Printing

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Michel Caza brings years of screen printing and UV-curable ink expertise and experience to this program.

Simon Goldsack, ColorSpan (Europe) provided considerable information from his diverse experiences.

Kostantina & Maurizio Tumidei, owners of Materia Grigia, who publish magazines for visual communication, labored for months to prepare everything and worked 18 hours a day to make it happen the weeks before and during the event. They selected the speakers, the location, sponsors,

and outlined the overall concept.

Helen Argiri helped with the diverse range of inkjet media and materials for the Roland eco-sol inks during my visits to Atlas S.A. and at the workshop. Alex Bouris, Atlas S.A., helped immeasurably during a photo excursion to the Aegean Sea island of Hydra, during evaluations of a Canon EOS 5D and comparison with a Kodak SLR/n (actually the older Kodak did quite well in comparison; a Kodak SLR/c beat both of them in its ability to capture a wider range of tonalities). Angela Papadopoulou patiently answered all my questions on the Roland eco-solvent printer and helped with the lectures on several occasions.

Vassilis Psaridis, Managing Director, Atlas S.A. was the major sponsor as well as providing hospitality to us visiting speakers.

Yosuke Yagi, Roland (Europe) gave a lecture on Roland inkjet printers.

Kikos Lambrou, and Luca Tubbini (GretagMacbeth) provided instruction during the program on color management.

Adonis Granis helped everyone from his knowledge of color management. His company, Colour Consulting Group, provides color management consulting in Greece and adjacent countries.

If you wish to hire FLAAR as a consultant, please contact us via Fax 419 372 8283 or via e-mail, [FrontDesk@FLAAR.org](mailto:FrontDesk@FLAAR.org).

**Lecture presentations by Dr Nicholas Hellmuth, FLAAR**

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*Seminar in Cincinnati*

**Lecture presentations by Dr Nicholas Hellmuth, FLAAR**

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*Seminar in Korea*

Lecture presentations by Dr Nicholas Hellmuth, FLAAR



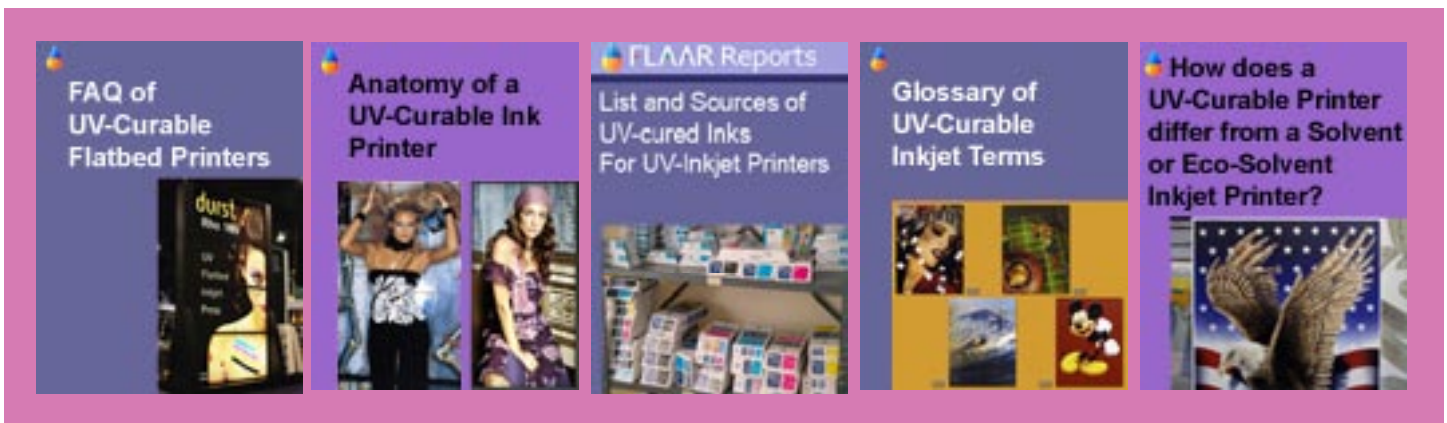
Seminar in Athens

If you are unsure which UV publications to select from the FLAAR Reports, here are suggestions:

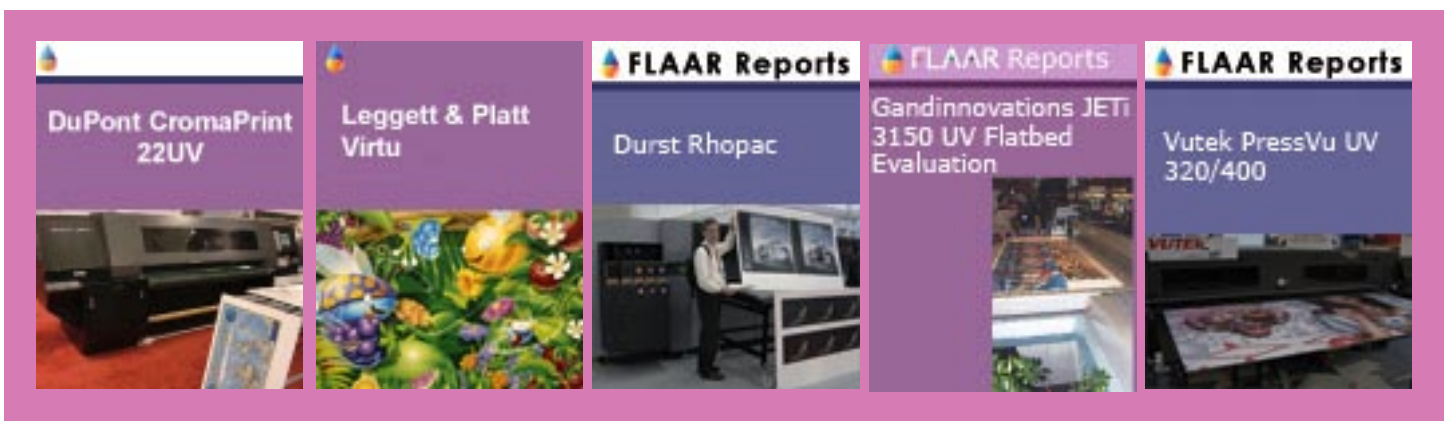
If you already have experience with UV-printers (but do not actually have one)



If you are beginning to learn about UV-printers and are trying to decide whether to acquire one, and if so, which brand to select



If you are fairly advanced, but wish more information nonetheless





If you are a manufacturer, distributor, reseller, or otherwise in the inkjet printer industry, your competitors have already ordered the FLAAR Reports, in some cases the entire Set. Each batch of FLAAR Reports is always substantially reduced in price when bought by the entire Set.

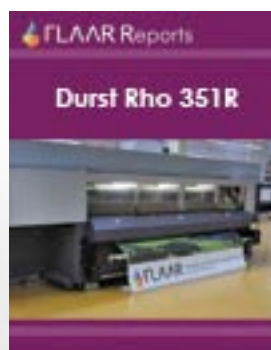
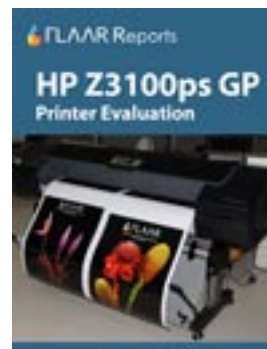
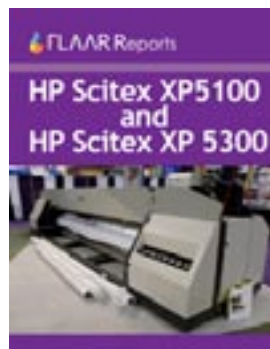
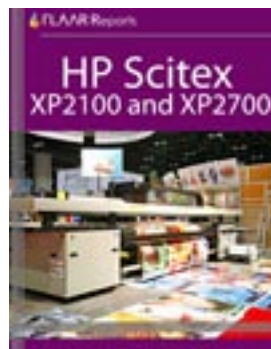
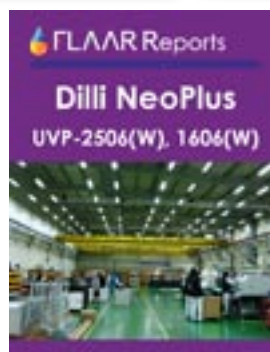
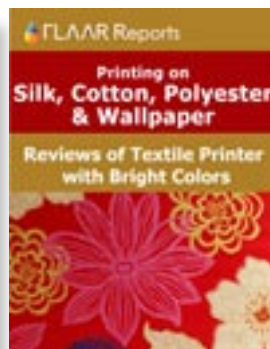
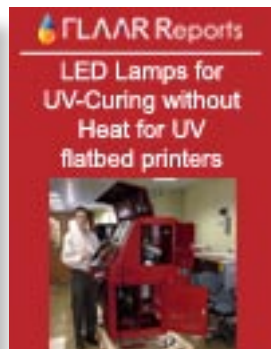
Most of the FLAAR UV publications have been updated during 2005 and again in 2006 and new titles have been added in 2007. Many are new for 2006 and often these have already been updated. Some UV topics are classics, and are still as valid today as when they were written (such as the summaries of DRUPA 2004 trade show). We also include updates via all the 2005 and all the 2006 trade shows, both in Europe and across the USA. For summer 2007 we are adding updates from having attended the Shanghai inkjet printer trade show (late July 2007).

**February 2007**

Free Sample Publications

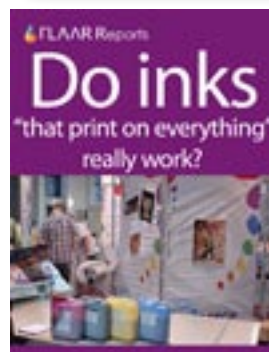
## FLAAR Reports

You can find these and more reports at: [www.wide-format-printers.NET](http://www.wide-format-printers.NET)



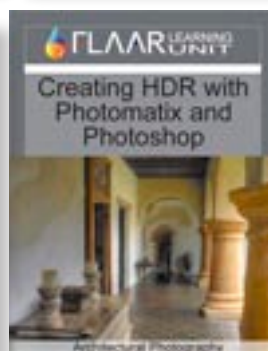
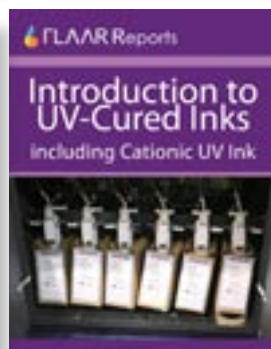
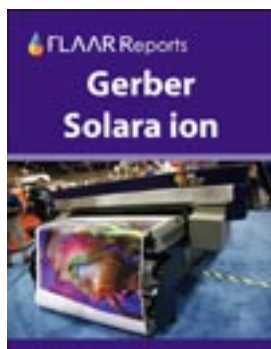
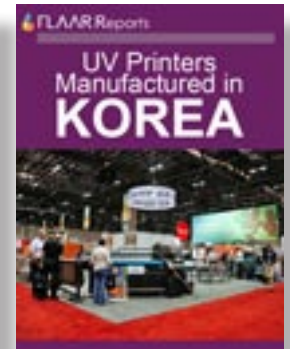
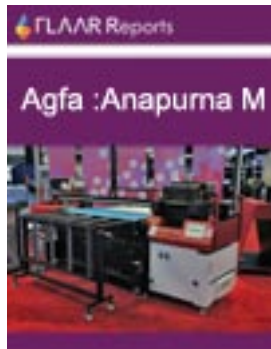
## These **FLAAR Reports**

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