



# Pigment Ink for Textiles

## Hongsam Pigmented Ink

Maria Renée Ayau and Nicholas Hellmuth



This February (2014), two members of the FLAAR staff: Pablo Martinez and Maria Renee Ayau, visited the Hongsam facilities in Shanghai, to observe pigment ink printing demonstrations. The year before, Dr. Nicholas Hellmuth and Maria Renee visited the same facilities and other Hongsam pigment ink end-user facilities.

We have also visited end-users, print shops that are successful using dye sublimation and reactive ink of Hongam ink company (during 2013).



Hongsam is an ink manufacturer, with a factory in Zhengzhou and their world headquarters and demo room outside Shanghai. They manufacture inks for HP, Canon, and Epson DX printheads. The inks for Epson DX6 and industrial printheads include lots of kinds of textile inks: dye sublimation (for transfer paper), disperse dye (direct to fabric), reactive dye, acid dye, and now pigment inks.

For many years now, Hongsam has been exhibiting at different trade shows around the world. There are so many ink manufacturers at a trade show that for you to notice one over the other, there has to be something that really stands out from the rest.

A few years ago, I noticed that Hongsam's pigment ink produced more intense and brighter colors than the rest of the other brands. Pigment ink in general is characterized for not producing the brightest colors compared to other kinds of textile inks.

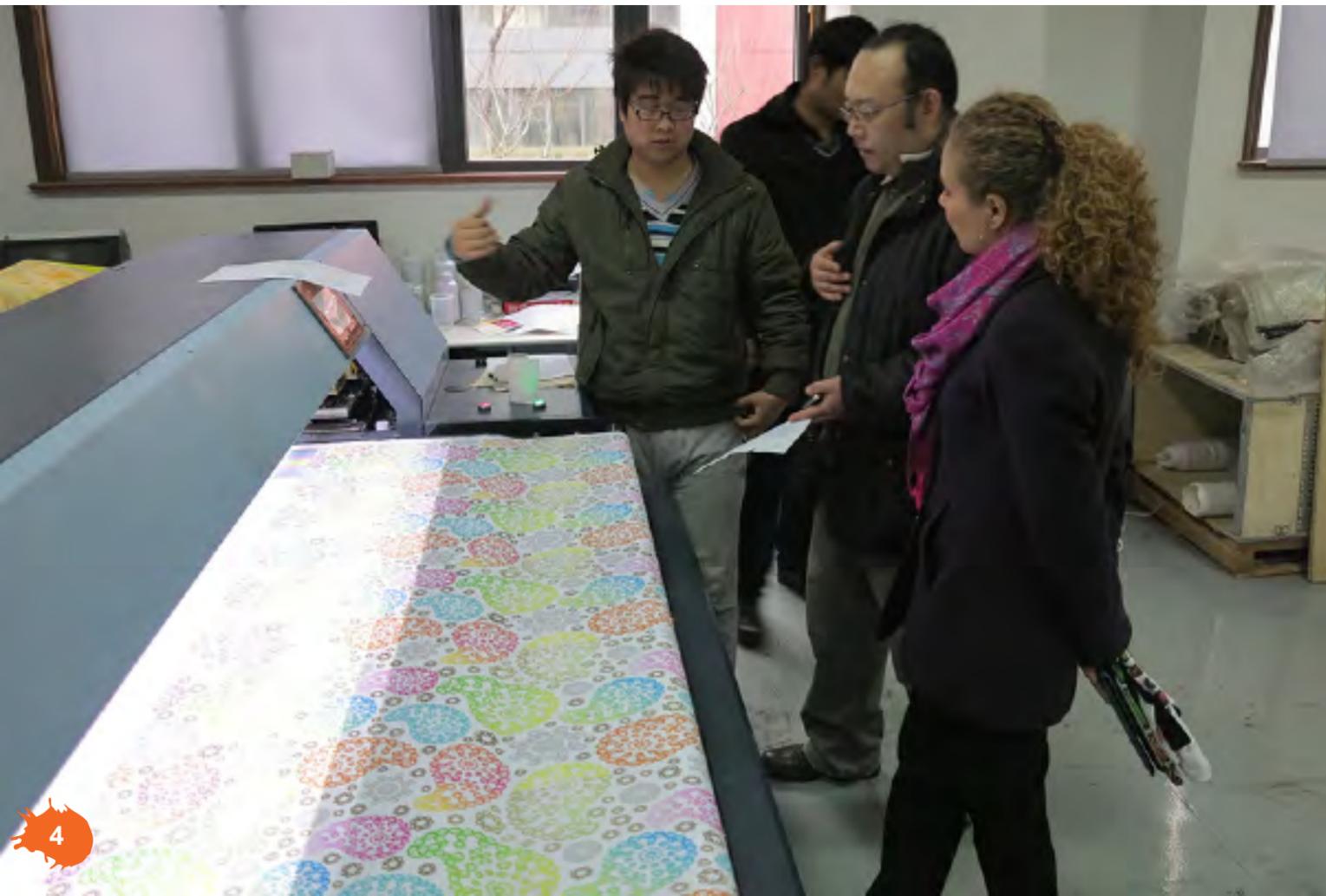
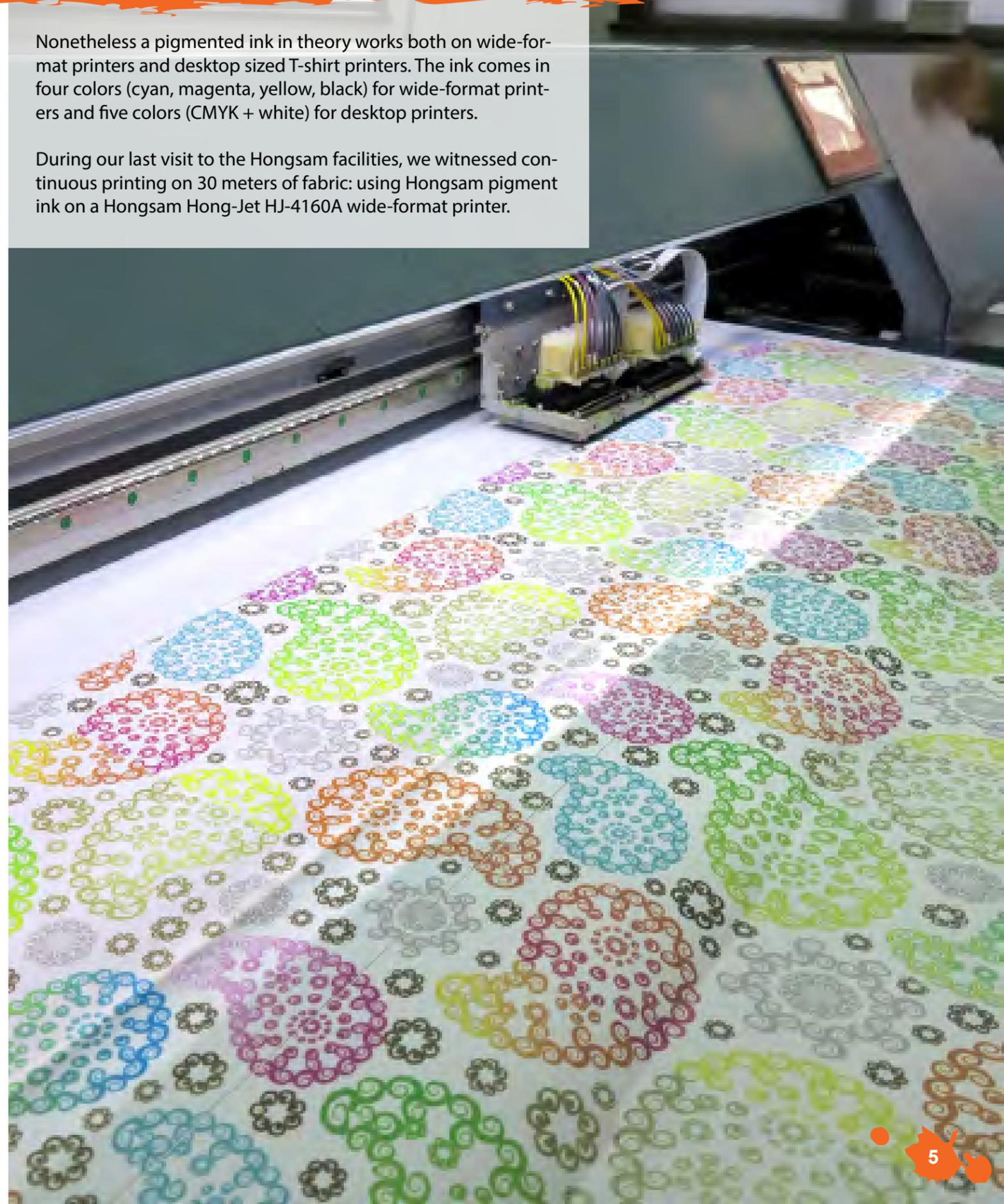




Be aware that every brand of printer has a slightly different ink delivery system inside it. Plus each printer has different firmware. And print shops use different RIP software. So it is to be expected that an ink will function a tad differently in a really wide-format printer than in a cheaper desktop printer. Plus the temperature, humidity, and dust content of your print shop (and the type of fabric) will affect whether the printheads clog or not.

Nonetheless a pigmented ink in theory works both on wide-format printers and desktop sized T-shirt printers. The ink comes in four colors (cyan, magenta, yellow, black) for wide-format printers and five colors (CMYK + white) for desktop printers.

During our last visit to the Hongsam facilities, we witnessed continuous printing on 30 meters of fabric: using Hongsam pigment ink on a Hongsam Hong-Jet HJ-4160A wide-format printer.



**Outcome (color intensity) depends on many factors**

Many factors will influence how the color comes out (on your T-shirt or other application). A heat press is made for sublimation ink. People use it for pigmented ink (and toner-based ink T-shirt transfers also). You have to take into consideration that pigment ink needs to be fixed with dry heat, so if you use steam this will affect the results.

Also the results may depend on whether using DX4, DX5, or DX7 printheads.

And always realize that your ink delivery system and printhead electronics and printer firmware all impact how the ink turns out. This is a polite way of saying that each ink has been created in a lab with certain size, shape, and engineering features. So your printer, with different ink delivery system, different temperatures inside the printer (not to mention the temperature and humidity in your print shop) may result in better results (or occasionally a result which is partially the fault of a printer for which this ink was not made).

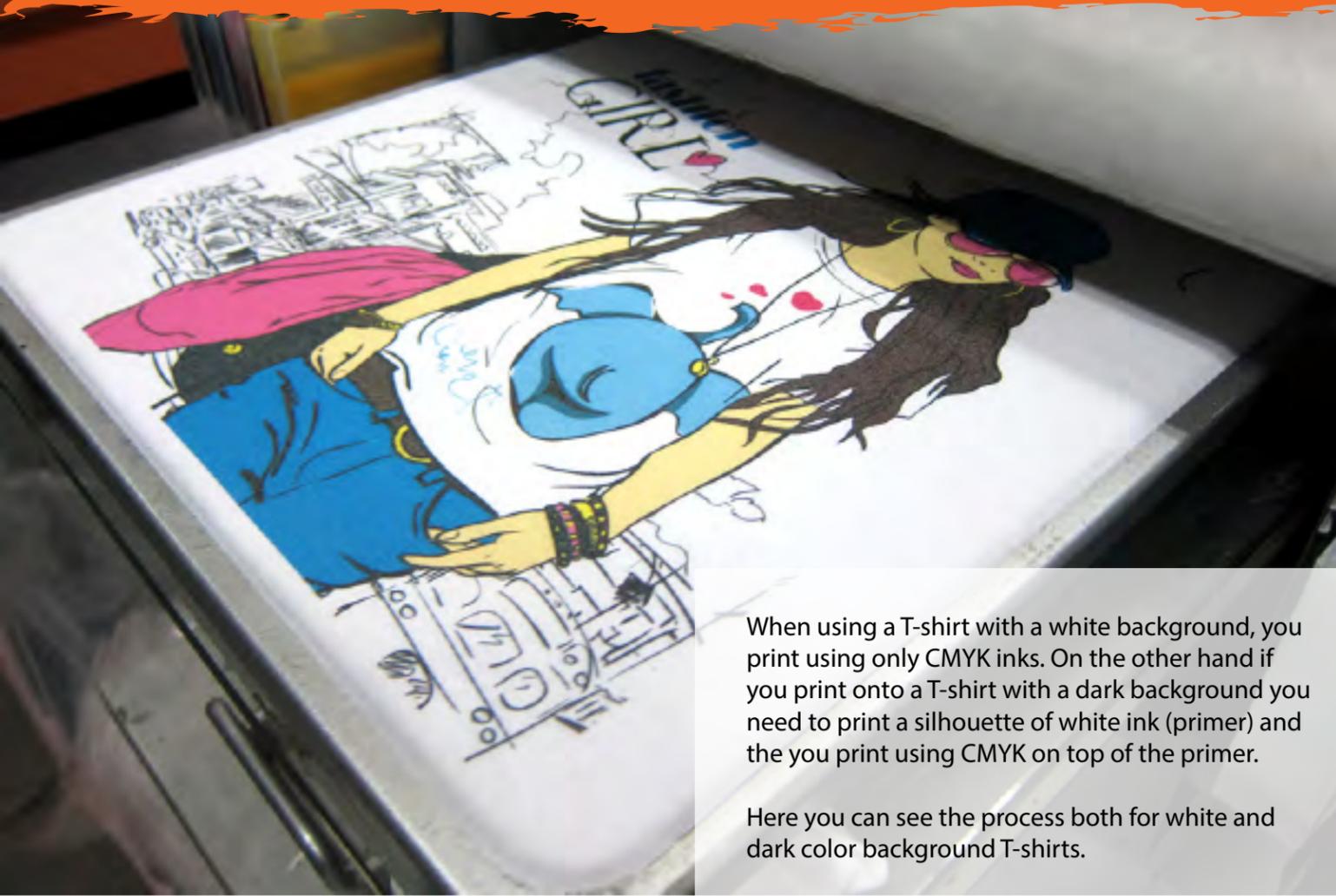
Pigmented ink has a huge potential for the coming years, since pigmented ink (in theory) should last longer outside than dye ink. So we will keep our eyes and ears tuned to watching the progress of the pigmented textile ink program of Hongsam ink. You can check their web site at [www.ink4you.com](http://www.ink4you.com), plus they exhibit at leading international expos such as the upcoming APPPEXPO 2014, in Shanghai, this July.



Samples printed with Hongsam pigmented ink

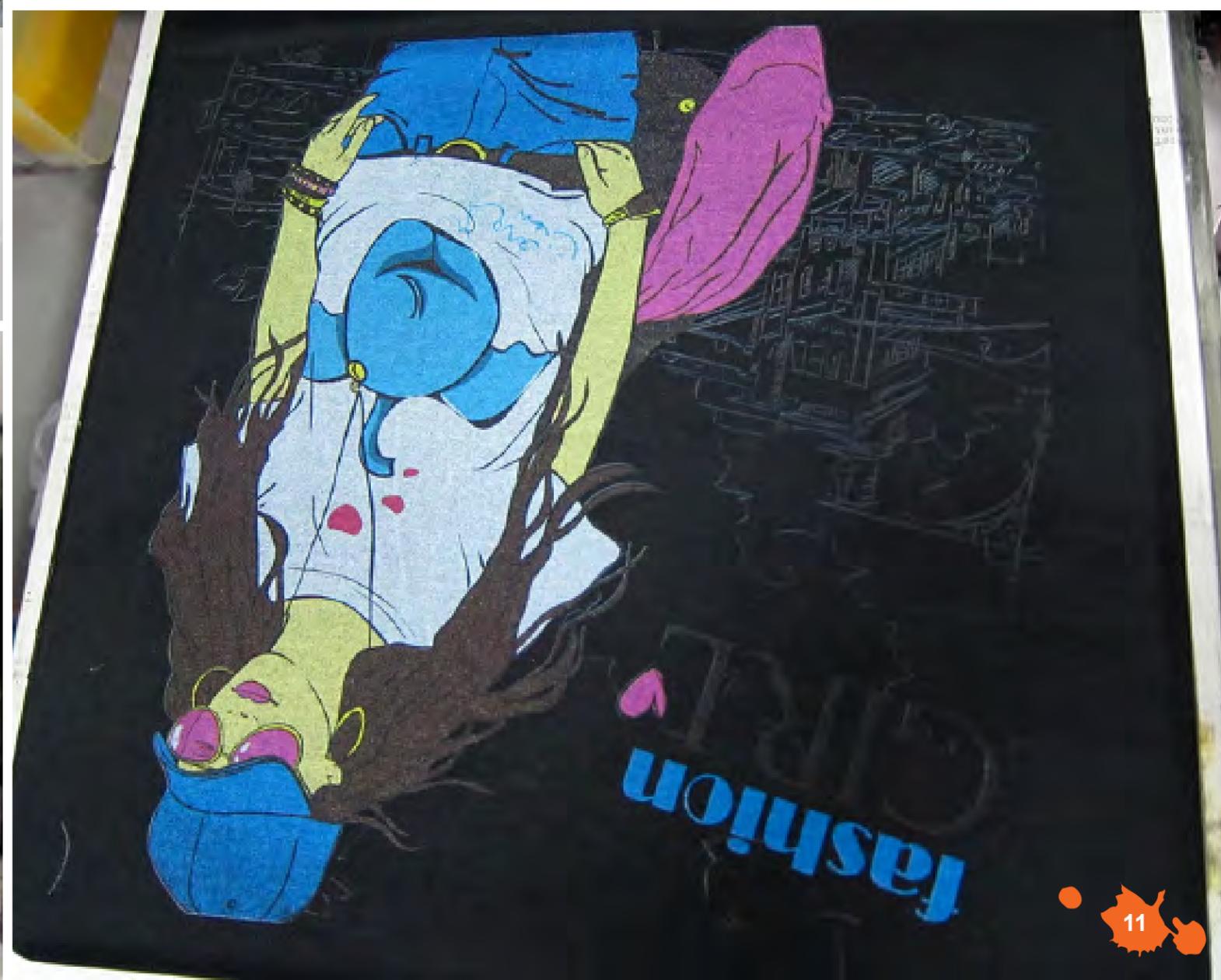


T-shirt printing using pigment ink requires a coat of pre-treatment on the fabric. First the pre-treatment is sprayed directly into the fabric and afterwards the fabric is set to dry by using a heat press to accelerate the process.



When using a T-shirt with a white background, you print using only CMYK inks. On the other hand if you print onto a T-shirt with a dark background you need to print a silhouette of white ink (primer) and then you print using CMYK on top of the primer.

Here you can see the process both for white and dark color background T-shirts.





Hongsam TextileJet pigment ink samples.



After printing, you need to fix the color using a heat press, to avoid ink from peeling or scratching.



Maria Renée Ayau, FLAAR's textile printer and inks specialist, examining Hongsam pigment ink results.





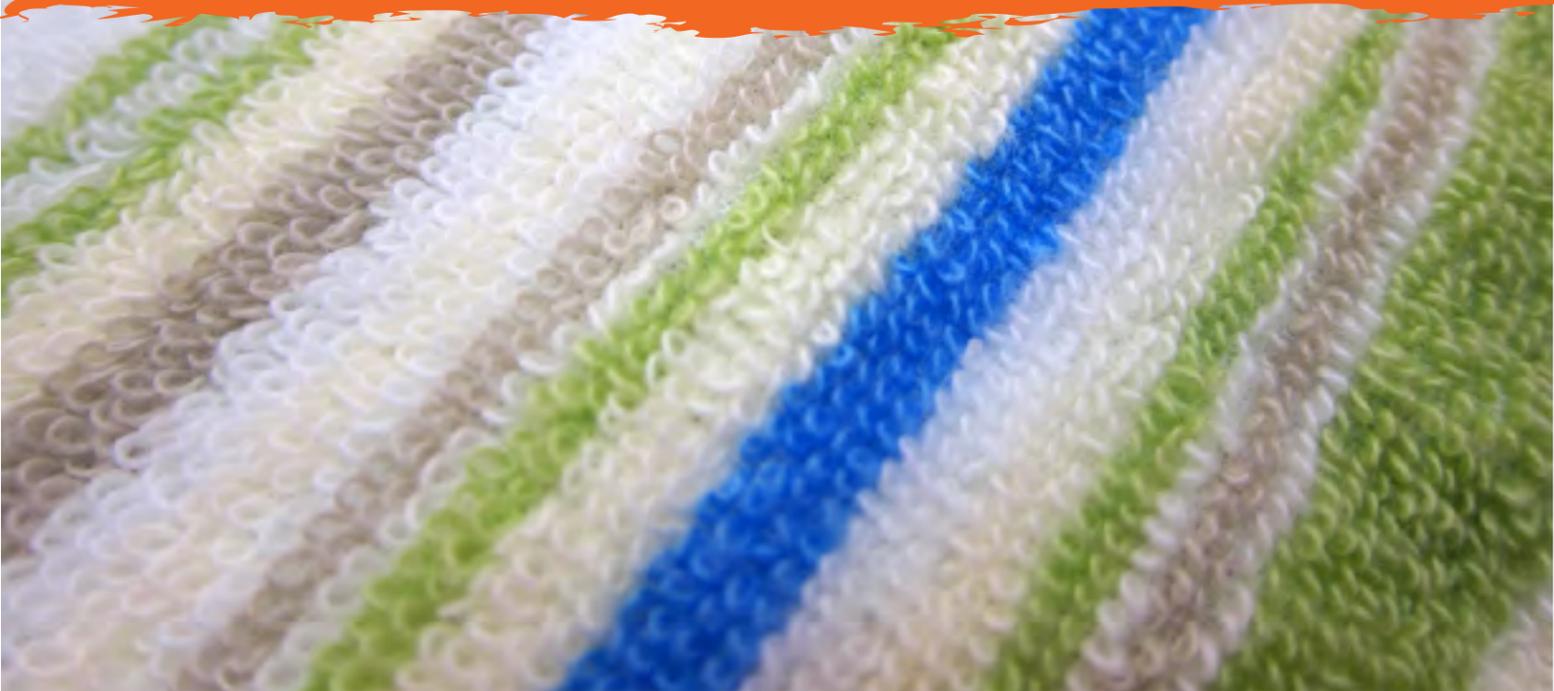
The single most important factor in producing a great T-shirt decoration is to start with an image whose colors work well on a fabric.

It really helps if the graphic designer understands what colors and combinations work best on a white T-shirt. And what other colors and combinations would look good on a black T-shirt.

The common error is just to take any old test image and print it on fabric. Whether dye sub, direct to fabric, or pigmented ink, some colors and combinations clearly look nicer than others.



To emphasize this, here is a set of colors which makes an impact.





Hongsam textile pigment ink comes in different sizes: 1 liter bottles, 200ml bottles, 20kg drums and cartridges.



Here are two of the patents by Hongsam and its shareholders, issued by the Chinese government. In other words, Hongsam has its own R&D department and facilities to develop new and innovative inks.

We at FLAAR have been to their factory in Zhengzhou, and now three times have inspected their demo facilities and corporate offices in Shanghai.

When we have first-hand experience (by visiting an ink factory and their company headquarters) this is the first step in a FLAAR evaluation of an ink brand.

# HONGSAM®

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