



PLATINACHROME

Analog enthusiasts will be familiar with the platinum print (or platinotype). The process, developed by William Willis in 1873, enjoyed great popularity and was known for its rich black tones, smooth tone value transitions and long durability. The process was predestined for portrait photography and would have been used for a long time if the beginning of the First World War and the associated rising prices for precious metals had not made the method disappear almost overnight.

Blatinotype makes use of a reduction reaction between platinum and light-sensitive metal salts. The paper is treated with a mixture of oxalic acid, ferric chloride and potassium tetrachloride platinum. Under the action of UV radiation, iron (III) chloride is reduced to oxalic acid iron oxide, which in turn is able to reduce the platinum salts that are bound in the potassium compound, which then also form metallic platinum. Called platinum black, it and embed themselves directly in the paper fiber. The image is then washed several times with solutions of potassium oxalate and potash in order to fix the powder and intensify the black tones.

So far so good. But if the process was used successfully more than 140 years ago, why do we have to incorporate digital methods into the workflow nowadays if it was possible without them back then? The answer lies in the history of camera technology: the image created in the platinum print is a contact sheet. This means that the finished image is only as large as the negative that is contacted on the paper for exposure.

Plate cameras at that time had glass plate negatives that were so large that they had to be transported by several men. These developed further into view cameras with sheet film, from which a perfect contact print could be made even without enlargement, as they came in sizes such as 50.8 x 61 cm. However, due to the development of roll film, enlargers, small pictures and today's digital photography in practical use, these have become a rarity, while the small picture

format, in the analog world as well as in roll film. There, however, the common sizes 6 x 6, 6 x 9 or the classic 35mm image with 36 x 24mm are more than unsuitable for contact prints, as all details are lost due to the native resolution.

Regardless of whether scanned analog material or digital files are the source material, we use today's digital possibilities to create a negative that is the right size. At the same time, with the help of a tone value curve previously adapted to the exposed washi paper, which is provided by Ilford, we try to find the appropriate depths that we print on the negative so that the contacted image does not lose any details and becomes perfect.

Since the platinum-palladium print is based on a complex chemical process, the properties of each individual component must be coordinated with one another. The smallest deviation can lead to failure.

The most important materials

Tesuki-Washi is the official name for handmade Japanese paper. The washi used for our printing consists of 100% Kozo fibers, fibers that are obtained from the bark of the paper mulberry, a tree that has been around since the 1st century AD. was used in China to make paper. The addition "Ichibei" refers to Mr. Ichibei Iwano, a luminary in the field of washi-making and

in Japan due to its Profession and the preservation of the tradition, which is extremely important for Japan, has been declared a living national treasure. He posed

the basis for the paper we use. The robust Kozo fibers guarantee a long-lasting image

- Despite everything, it is a natural product with a soft texture and deckle edges. Small organic components could still be contained in the fibers and be responsible for small differences in the print result, making each result unique.

We use Platinachrome Digital Film 140, a polyester-based inkjet film, which offers high permeability for UV rays and thus ensures perfect gray levels and smooth transitions between the individual tones. You can print this film with the water-based pigment inks of the common manufacturers.

Our "Coating Solution", with which we cover the paper and prepare it for printing, consists of three individual components: an iron, a platinum and a palladium solution. The iron solution acts as the one that gives the paper photosensitive (= light-sensitive) properties, while the other two solutions form the platinum and palladium layers, the failure of which forms the subsequent image during the reaction.

The other two solutions are developer and washing solutions, which should already be known from other analogous processes. A detailed list of the required materials can be found in the info box below.

The material used

Platinachrome Tesuki-Washi Ichibei
Platinachrome Digital Film 140
Platinachrome Ferric Solution
Platinachrome Platinum Solution
Platinachrome Palladium Solution
Platinachrome developer
Platinachrome washing solution
humidifier
UV exposure unit (JOB0 is planning a new device in 2020)
Contact print frame
Photo trays
Micropipette
Deionized water for the Ferric Solution brushes for coating without metal parts. Measuring spoon 15 g
Drying plate
Metal-free pliers, etc.





The washi paper from Mr. Ichibei's hand - the Ilford PlatinaChrome product

1 **Moisten**

The first step is to moisten the washi paper sufficiently and evenly. If you don't have a humidifier, you can alternatively fix the paper over hot steam. The paper should be moistened for about 15 minutes. If water droplets get on the paper, it must first dry completely before the moistening process can be repeated!

2 **Measure**

You should think about the size of the picture and the space and position it will occupy on the paper beforehand. That not only saves enormous amounts of solutions, it also avoids that e.g. important details are covered by a frame. Once you have determined the area, you can calculate the amount of solution that you will rub on the paper. The following quantity prom2 applies to Ichibei paper:

3 **Start**

After you have calculated the amount of your solution, you can prepare the three-component solution. The platinum and palladium are already ready to use, only iron is mixed with deionized water. If you want to print a lot of pictures over a short period of time using the PlatinaChrome method, you can put 25 ml of water directly into the iron bottle, but you should have used up the rest after three months at the latest. Expired iron solution creates an undesirable washed-out effect.

Coating solution approach, calculated on the square meter

Ferric Solution: 41.6 ml
Platinum Solution: 12.8 ml
Palladium Solution: 25.6 ml
Distilled water: 54.3 ml

4 **Coat**

Ichibei can be used on both sides. First dip your brush in pure water, then remove any excess before dipping the brush in the solutions. Coat the paper evenly with the prepared solution.



5 dry

After coating, hang up the paper and let it dry in the dark at room temperature, which ideally should not take longer than 30 minutes. However, the coated paper should be printed within six hours after coating, as this can otherwise have a negative effect on the result. It is also not recommended to speed up the drying process with a hair dryer that is hotter than 38 °.

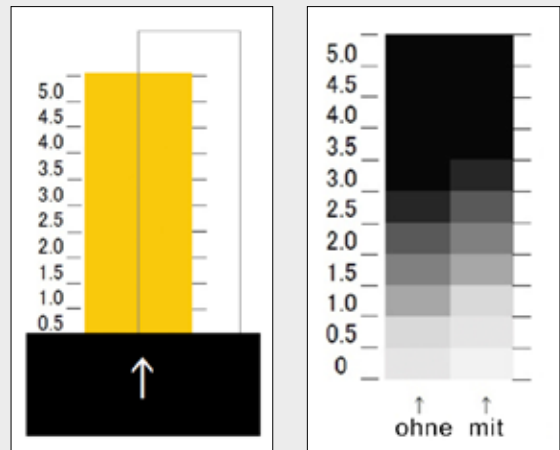
6 Find the exposure time

To find out the exact exposure time, take a coated paper and record the following scale in steps of 0.5. The individual stages / steps / values describe the exposure time in minutes under UV light. Then cover one longitudinal half of the sheet with digital film and the "0" step with a piece of black paper. Then expose the paper to UV light for half a minute. After half a minute push the black paper to the next count line and repeat the process until you reach the top value. Develop the paper (The development process is described in detail from step 9 onwards.) And look at the result.

Regardless of whether it is from the negative created in analog, the scanned material or one Digital recording as origin, with craft to unique

7 Create a negative of your picture

Open your desired image in Photoshop, convert it into a black and white image and invert it into a negative. Now apply the tone value curve provided by Ilford to the image. Then you flip the image vertically. Print the image on the digital negative film. The settings for the printer are: glossy paper and highest resolution. Depending on the printer, it may be necessary to fix the material on a carrier paper. Please note that the print head must be set to the greatest possible distance.



Digital Film 140 - the basis for the negative



The original digital file, opened in PS CC



Our motif mirrored, the 1st step to negative



Lorem Ipsum dolor



Tone value curve for the Canon printer



The negative printed on Digital Film 140

8 Place the negative on coated Ichibei paper

Make sure that your previously measured and coated surface exactly overlaps with the image, otherwise protruding parts will not be exposed. Place the picture in the contact printer and make sure that as few bubbles as possible occur between the paper and the film, as these otherwise let the light through differently and lead to spots in the finished result. Expose the image with the previously measured standard time and then proceed to development.



9 development

If you treat the exposed Ichibei paper with the developer liquid, the exposed areas are developed, while the unexposed areas due to the black areas on the negative are merely washed. To make the developer liquid, take a bottle of Platinachrome developer and add 850 ml of water. The developer fluid does not tip over, you can save unused fluid and use it again the next time you print without hesitation.

Place the exposed sheet in a dry basin.

Tip the developer liquid quickly and evenly over the entire paper until the liquid is approx. 2 cm high in the basin. If you make the mistake and let the developer run slowly over only one point, irregularities in the development can occur because the reactions on the sheet take place at different speeds.

Leave the image in the developer bath for about 3 minutes before washing the image under running water for one minute. Great sensitivity is required in all of the following steps, as the paper is extremely sensitive due to its wet condition.



Development times

development 3 min, 15-20 ° C

Water 1 min running water, 15-20 ° C

To wash Bath 1 clearing agent 5 min, 15-20 ° C

To wash Bath 2 clearing agent 5 min, 15-20 ° C

To wash Bath 3 clearing agent 5 min, 15-20 ° C

Water 30 min running water, 15-20 ° C

dry season 2-3 hours at up to 50 ° C

The way from negative, of digital or analog origin, to the end result is almost complete.

10 To wash

To make 1 liter of washing liquid, mix 15 g of clearing agent with 1 liter of tap water. Three basins are required because we have to wash the picture three times with new washing liquid so that all residues are removed. Again, it's very important the picture

first to place in a dry basin and only then to distribute the liquid quickly and evenly instead of placing the picture in pre-filled basins. After the picture has lingered in the basin for 5 minutes, we rinse it again with tap water and then let it dry.

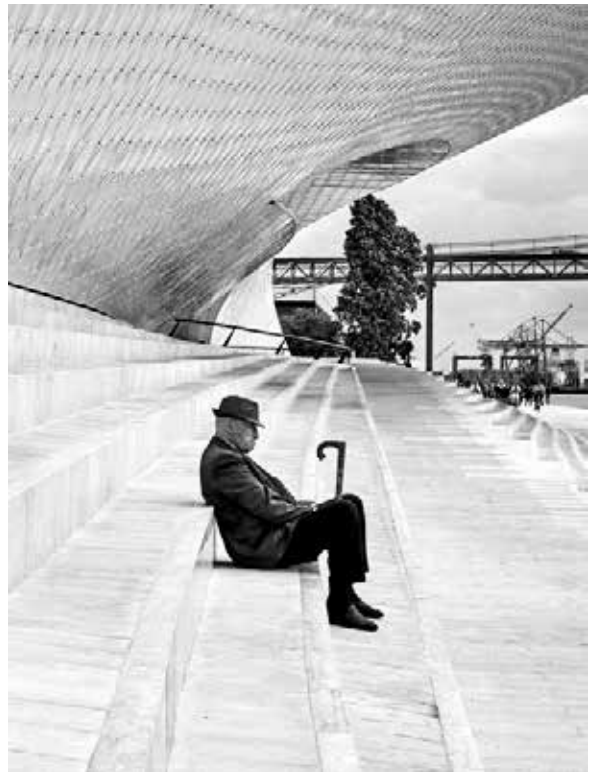
11 Dry

Prepare a flat board, thin polypropylene is recommended as material so that the picture does not stick. After you have carefully laid it down on your surface without creasing, dab the wet paper dry with a cloth and remove excess moisture.

Let the picture dry completely.

Once this is done, your picture is ready!

What began as an arbitrarily reproducible digital image has now become unique. Handcrafted and gives a picture the value it deserves.



The digital origin



Platinum-palladium printing is not only for those keen to experiment who, when looking at a picture, want to call not only the motif itself, but also every single step of the process real manual work. The exclusive platinum-palladium print is also the guarantee for the creation of unique one-offs.



Patricia Klöppel

It combines years of experience in front of and behind the camera and assumes this not only in the digital but also in the analog workflow Proof.