

Surface Treatment Applications for Platinum Jewelry

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Platinum's popularity in the United States is on the rise, and its steady growth rates makes it the metal of choice for trend-conscious jewelry designers and jewelers alike.

Since more and more designers, who have previously only worked in gold and silver, decide to give working with platinum a chance, there is an increasing number of creative and original jewelry designs available, compared to a decade ago, when platinum's revitalization as a jewelry metal started the trend.

Those designers, who have been in the platinum arena since then, were able to carve their niche (and secure their market share) for their designs. Many of them created a "Signature Look", which is today associated with their name and synonymous with the "Platinum Look." In this paper I would like to take a look at some of these designs with you. By analyzing the use of surface applications and the effects they create, you will see how designers have built on their field of specialty and perfected it.

Then we will take a look at the tools that are available for work on platinum at the work bench and in the jewelry shop. We will

discuss how to avoid contamination and learn some time-saving options for texture applications.

Finally we will spend some time evaluating the role of designers in today's growing market place. Well, let's start out with looking at some very intriguing, unique and masterly crafted platinum jewelry designs. You will see, that although there are many different styles, ways and looks to platinum jewelry, there are certain attributes that all featured designs today have in common:

- High quality of materials used (at least 900/000 Platinum, at least 18kt yellow gold), high grade of diamond and gemstone quality.
- High level of expertise working with platinum and utilizing its unique attributes.
- Distinctive "Looks" that are different from "mass" products.

MICHAEL BONDANZA

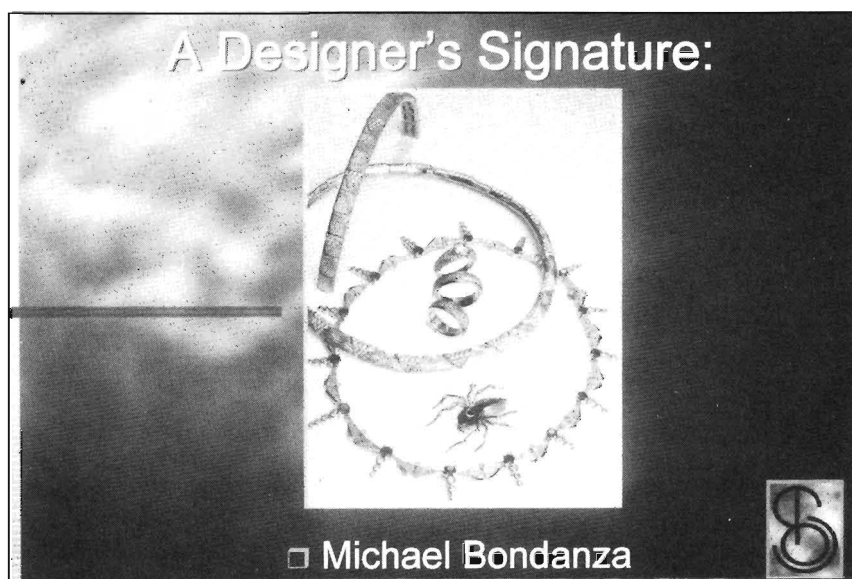
This is a set of jewelry by Michael Bondanza. It is made of platinum, diamonds and rubies.

Mr. Bondanza's specialty in platinum surface application is his signature "wavy" engraved lines in combination with segments of pave set diamonds. The overall look of his designs is a simple, uncluttered and contemporary. Some of his creations are modern quotes of estate style pieces.

Here you can see his modern interpretation of a dragonfly necklace. A motif that was very popular during the Art Nouveau Movement. The dragonfly theme was used by famous jewelry design houses like Tiffany & Co., Cartier, and Lalique.

CHRISTIAN TSE

These are two designs by Christian Tse. The platinum necklace with matching earrings are manufactured in a mesh-like technique allowing a great amount of flexibility and movement. Although very fine and dainty-looking, the specific density of platinum adds a nice heft and balances the pieces. The timeless simplicity and elegance of his designs are a characteristic feature of his creations. Many of



his pieces have a "tangible quality" that makes one want to touch and feel the piece. Although the piece seen here is made of platinum only, some of his designs also feature combinations of gold and platinum.

STEVEN KRETSCHMER

Steven's designs are contemporary statement pieces that represent the unity of technical

know-how and bold artistic expression. He holds several patents for metallurgical inventions. Among his most recognized developments are his tension setting designs, his blue gold and platinum jewelry and the Plat S[™] alloy that is marketed by Hoover & Strong. Many Kretschmer pieces are two-tone and feature polished and matte finished surface texture components, adding

balance and contrast points to his asymmetrical designs as well as creating variations to his non-repetitive bracelet and necklace elements. Influenced by European Design during his training years overseas, Steven Kretschmer's pieces are probably the most "European Looking" made by a US designer.

URSULA SCHOLZ

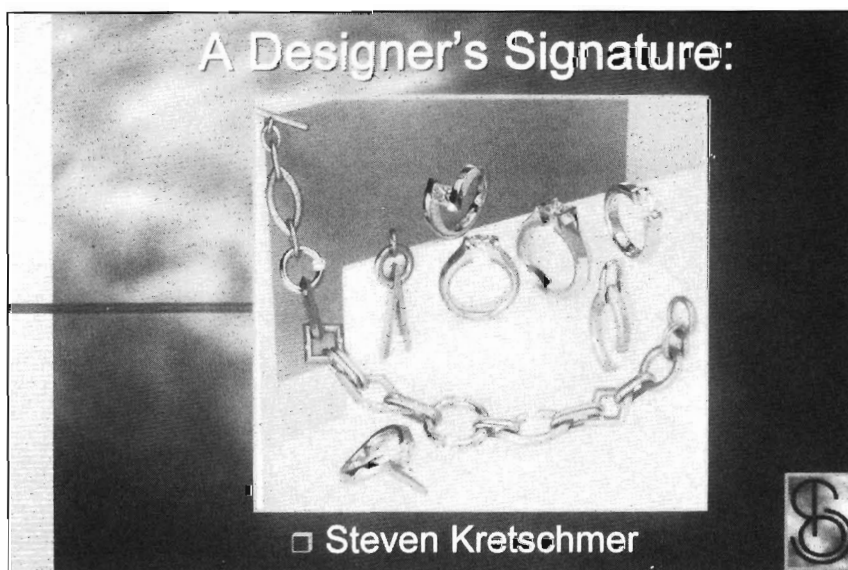
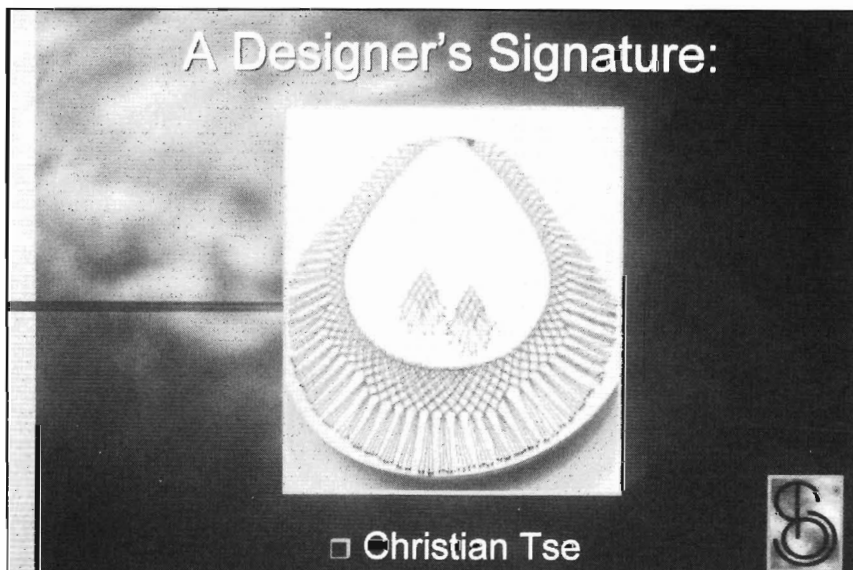
Now that I just mentioned the "European Look," here we have a matte finished jewelry set by Ursula Schulz from Germany. Her designs are straight forward, clean and simple, often working with the effects of light and shadow. She uses gemstones sparingly in her designs, mostly reduced to the white, reflective values of diamonds. Most of her platinum jewelry is matte finished as it produces a higher white color quality than mirror polished platinum. Her pieces are of substantial size, nicely balanced in weight and composition and masterfully crafted with the comfort of the wearer in mind.

PLATINUM MATTE FINISH

Now, what makes a jewelry piece a signature design? Oftentimes it is the use of a particular surface texture that creates the look a jewelry designer is associated with. Customers often describe a brush or satin finish as "platinum finish."

This illustrates the fact of how much one finishing technique has defined the look of contemporary platinum jewelry design in the eye of the public as the "Platinum Look" (the texture is associated with the metal).

As a jewelry manufacturer or bench jeweler you are certainly aware of how many different degrees of coarseness a "brush finish" can have. In addition, there



are many different tools available that achieve the same result. There are:

- sand/emery paper
- brushes (like brass brushes)
- 3M blocks
- scotch brite sponges
- felt wheels
- polishing motor attachments for flexshaft

In my experience it has proven a useful tool to manufacture some small sample sheets of "finishes" to choose from. Assembled to a chart, these samples are used as a reference to improve communication between manufacturing and customer. The customer can, for instance, order the light brush finish #3 and the manufacturer knows which coarseness to choose (you can even mark on the manufacturing chart, with which tool the finish was created).

A note of caution:

At this point I would like to mention that all finishing techniques that require the use of media, such as sanding blocks, emery paper or brushes are a potential source of cross-contamination.

You should make it a habit to keep one set of finishing media for platinum only. Keep those emery sticks, blocks and sponges in a marked zip bag or plastic container with lid to make sure that those tools don't pick-up gold dust or other contaminants from the workbench surface.

PLATINUM MATTE FINISH: SANDING

Another "Sanded Look" surface texture is the result of either sandblasting (keep separate media for your platinum surfaces!) or needle wheeling.



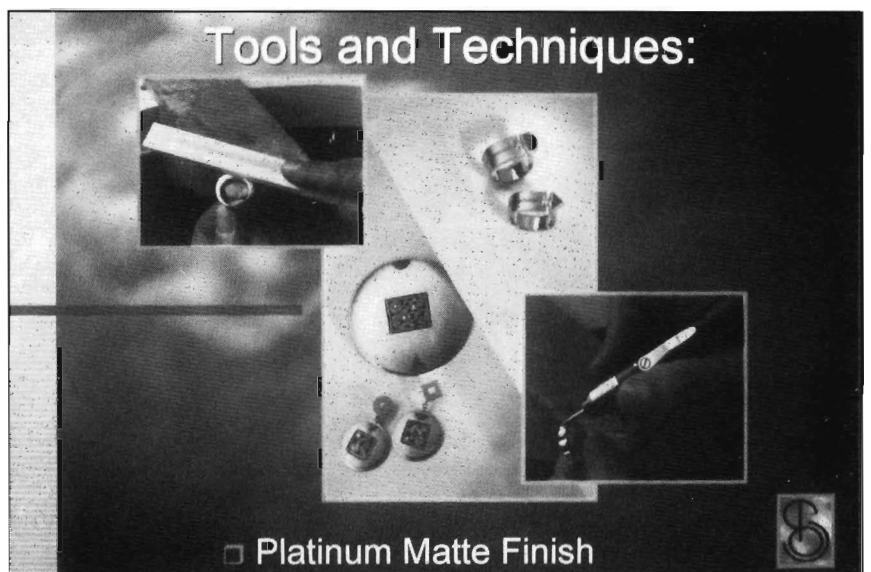
Especially when combined with mirror polished components this technique creates a dramatic contrast between the "cool" white polish and the "warm" white velvety texture of the platinum surface.

If you are using a needle wheel for surface treatment, make it a habit to clean the wheel in an ultrasonic bath before and after every use on platinum. The clean-

ing before use prevents cross-contamination from particles that were previously exposed to the wheel. The after-use cleaning allows to recover those platinum micro-particles by collecting the bath's filtration.

LITTLE FIXER-UPPER TRICK

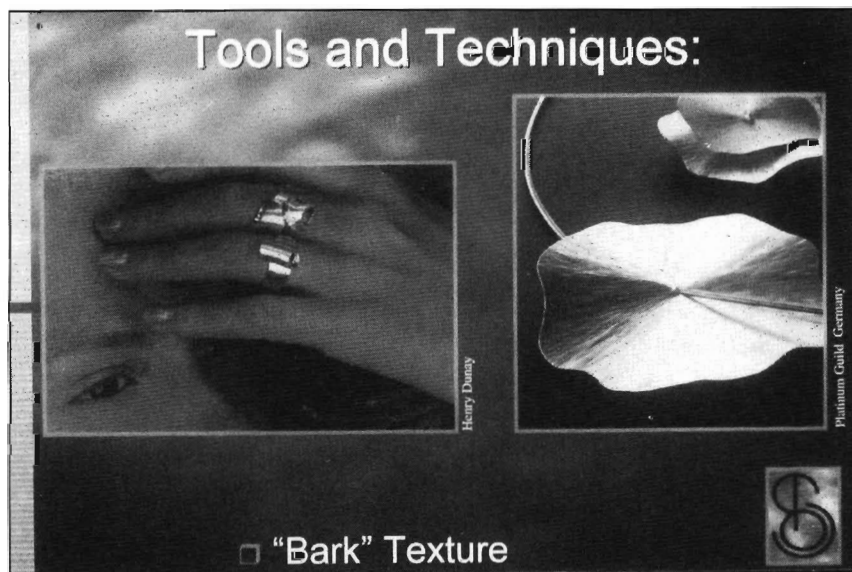
Sometimes, for instance, after sizing or lasering it becomes necessary to refresh a small area of a





sanded surface. Instead of re-doing the entire sanded component of the piece (with all the protective covering steps involved), I have discovered that small areas can quickly be touched-up by using a modified flex-shaft drill bit. Take a broken or dull drill bit or burr and cut a flat area in a 30-45 degree angle to the shaft axle. Polish the surface on an oil stone, followed by some rubbing on a

diamond powdered leather for a fine mirror polish. Then take a test piece of scrap metal and run the tool over the surface using small, circular movements. The tool-tip will hit tiny, needle-point size pits into the metal surface and by adjusting the amount of your circular movements, as well as the angle in which you introduce the tip to the surface, you can adjust and match die quality



of texture to the one of your jewelry piece. A great time saver!

THE BARK TEXTURE

This texture is achieved by burr-finishing, but can also be engraved, or carved into the wax of a casting piece. Commonly, cylindrical disk burrs and wheels in combination with alternating pressure in parallel-line movements are applied to the metals' surface to achieve this "tree-bark-like" look.

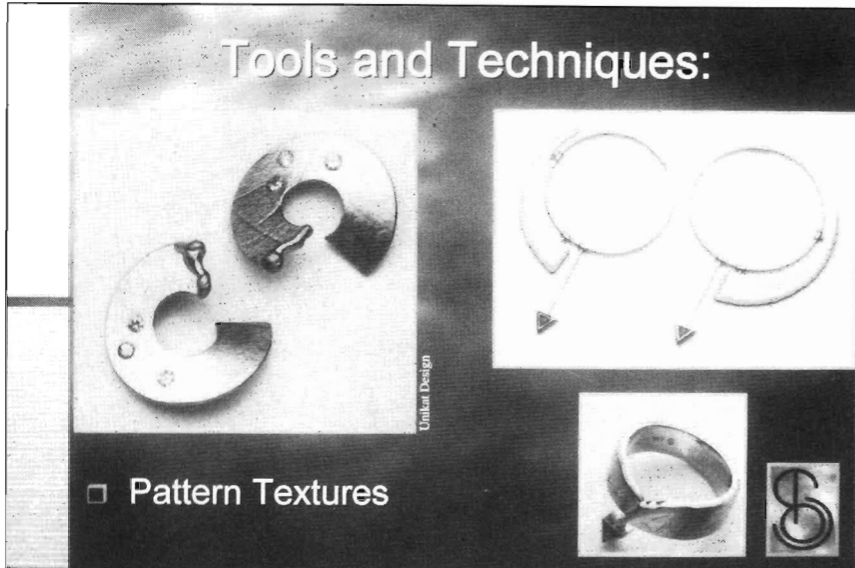
Due to the high surface resistance and goocyness of platinum, tools should be used with generous lubrication to reduce dragging friction and to extend the tools' life somewhat. Still, burrs wear out much faster than you are used to from gold and silver application and in order to maintain an even surface quality throughout the entire piece, you might have to use a couple of burrs.

A bold and rugged look is achieved by this texture application. Dramatic effects can be created by contrasting the bark texture with soft, polished lines or yellow gold components.

PATTERN TEXTURES

Here you can see some textures that were cut and rolled into the metal surface. When applying the rolling technique, a plate, film or other media (with a positive or negative pattern in-print) is used in combination with the metal sheet that is being textured. Both components are rolled through the mill and the pattern from the media is pressed into the platinum surface.

Textured sheets can also be produced by die-stamping (pressing), chasing and punching. Regardless of the technique used, it is very important to make certain that none of the pattern-giving



□ Pattern Textures



□ Steel Wool Texture

media or dies contaminates the platinum surface.

Unbleached paper or felt can be used as a parting agent to avoid direct tool contact.

PATTERN TEXTURES

The pair of earrings that you see here (by Unikat Design) on the left side have been textured by rolling a piece of grained leather onto the platinum surface.

Other media (in combination with rolling or pressing) create unusual surface textures. These media are for instance wire and nylon netting, fabrics, cardboard, plastic and organic substances such as ostrich leather or snake skin.

Another classic example for a pattern application is the use of a Millegrain (Millegriffe) wheel as a technique of (hand) pressing a

pattern into a metal surface by use of a steel tool. The created effect resembles a row of small grains or balls, often used in estate pieces and classic jewelry designs.

STEEL WOOL TEXTURE

This "scratchy look" is created by using a steel wool pad or hard glass fiber brush. Particularly suitable for a larger, non-ornate platinum surface this texture is often used in combination with yellow gold to create dramatic color contrasts, as the scratched platinum has an intense white color quality.

EMBEDDED PATTERNS

Here are three examples of embedded patterns in these bangle bracelets by Niessing. Although we have seen other embedded pattern elements in some of the previous pictures, this particular example shows that the pattern can rise beyond being a decorative element and take the center stage when pattern, form and function becomes one. Embedded patterns frequently find use in wedding band manufacturing, but also Mokume Gane, Inlay and Niello are traditional techniques of embedded patterns.

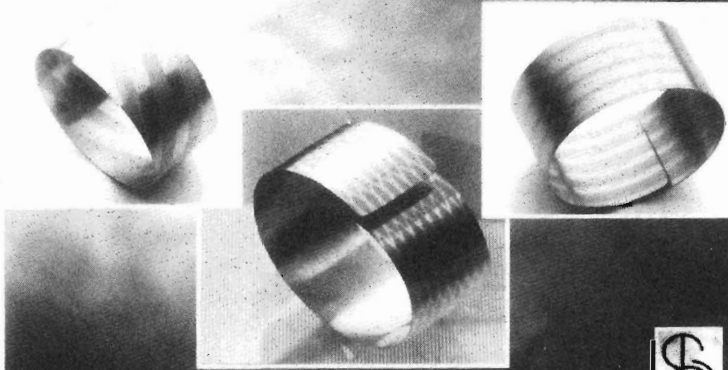
Most of these techniques are used in one-of-a-kind jewelry making and are very labor-intensive. The most common techniques to achieve these effects involve fusing, welding, interlocking, folding and chasing.

CONCLUSION:

As this paper has shown, there are many different techniques available to create surface textures with distinct character.

The allotted space in this booklet only shows some of the most important ones. Other applications such as enamel, inlay,

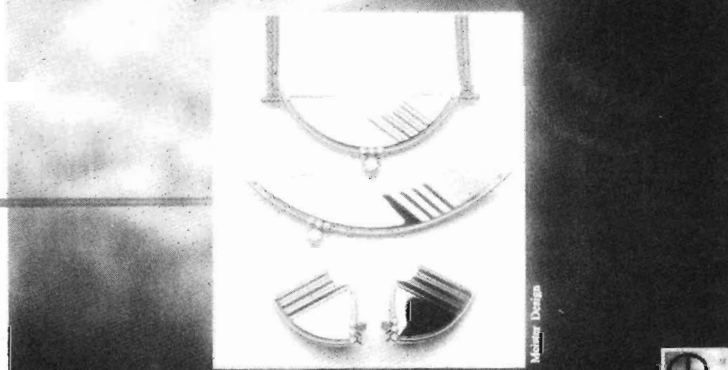
Tools and Techniques :



□ Embedded Patterns



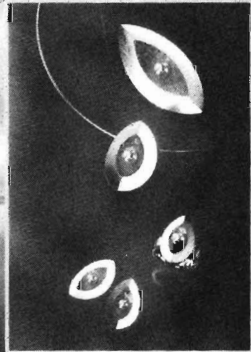
Tools and Techniques:



□ Sandblasting and Needle-Wheeling



Distinctive Designs :



□ Creative Mind

□ Innovative Technology



engraving, guilloche, chasing and anticlastic-shaping are such large subjects that they can easily account for another paper.

All these surface texture applications do however represent a "pool of possibilities" to be explored by you; allowing you to express your "Signature Identity". Mastering one specialty to an extent that it becomes unmistakably your distinct design style is the first step to carve a niche and secure your share of today's increasingly competitive market. Being an established player in the arena allows you to make the trend, versus being a follower of fashions and fads.