

# One Hundred Views

The World of Angular Momentum & Manu Propria

- overviews, insights and impressions on Artisan Watchmaking -





*Angular Momentum  
of Switzerland*

&

**Manu Propria**  
„with my own hand“

*Some years ago - because of difficult changes in the watch industry. I re-structured Angular Momentum with the vision to create and manufacture beautiful handmade timepieces, made under inclusion of old technologies and traditional craft with the premise that no single part is made by CNC machines, not depending to suppliers and all working steps from case making to the artwork done with my own hands (Manu Propria).*

*To create creativity I need an inspiring environment,*

Already in my very young teens, I was excited to do something with my own hands and became interested in the art and craft of the present time and the past, fascinated by beautiful things that skilled artists and craftsmen have created and achieved during the centuries.

One day in the school's library I read about the ideals of William Morris and John Ruskin, who proposed that in pre-industrial societies, people had achieved fulfillment through the creative process of handicrafts. This was held up in contrast to what was perceived to be the alienating effects of industrial labor.

In 1976 I began an apprenticeship as a display artist in a department store in Bern, which was internationally renowned for its exceptional window display. On the job I was trained in various crafts such as sculpturing, drawing, serigraphic art, painting, carpentry and much more.

These four years of training and cooperation with a team of over 30 skilled and experienced display artists shaped my life.

During my apprenticeship, I studied engraving, scientific drawing, old master painting and pottery under the guidance of experienced teachers at the Art school.

*Stufenbau (Step Construction) built as a black powder factory in 1924/25  
stands under conservation of monuments and historic buildings*

At the age of 20 – due to a bet – I became interested in knife making and metalworking. Fortunately I met a knife maker, who runs a knife making workshop founded by his great-great grandfather not far outside of Bern, where I spent almost all my spare time.

Under the guidance of his knife makers I learned to forge steel, to grind steel blades, to harden them and to make the necessary parts to complete a dagger or a folding knife. Since this happened at a time CNC machines and computers have not been invented yet, all parts have been made by hand and hand operated machines.

A few years later the International Custom Knife Maker movement arose and so called “knife shows” appeared in almost all countries of the world. During many years I took part in these exhibitions where I successfully displayed and sold my works.

Almost fluently it turned out that I had to deal with the goldsmith’s art to make more creative knives and especially its handles and scabbards. From there I worked for several years - always in the evening - in a goldsmith’s workshop to learn the specific techniques.

In the late 1980, CNC Machines edged out the traditional machines from the workshops and perfectly machined knives appeared at the International knife shows. Within few years the custom knife making movement disappeared almost completely from the scene, suddenly destroyed by CNC machined mass produced high-quality knives made in the USA and Japan. (Seen from a today’s perspective certain parallels within watchmaking are obvious.)

I dedicated myself to the goldsmith’s art and metalworking. Over many years, I worked as a goldsmith in my spare time and created and made many jewelry pieces and objet d’art firts for friends and later on for an International clientele and exhibited my work during many jewelry exhibitions. At that time my works where labeled under the mark „*Manu Propria*“, Latin term for „made with my own’s hand“

Around the same time I started studying the art and craft of Japan. Even today I am convinced that there is nothing comparable in the world regarding its design, aesthetic, quality and excellent execution.

In the following years many trips to Japan followed where I got in contact with the President oft an association dedicated to Japanese traditional art, which is subordinate to the Government.



*Staircase (138 steps) to the Angular Momentum atelier with historical cable car built in 1924*

Under his guidance I studied Japanese art and culture and was introduced to skilled artisans of various arts and crafts where I had to gain a deeper insight to the culture and its arts.

These years have strongly influenced my idea of the creation and the production of things and have shed a new light on consumerism in general.

In my professional life I made a quick career. At the age of 35 years, shortly after I became member of the board of the department store Holding company, I realized, that I cannot deal with the modern production, retail and shopping mentality. I quit my job and founded my own company dedicated to the design and manufacture of hand made things.

One day I became involved in a watch project and became interested in watchmaking and in 1998 I founded my own watch company.

#### *Angular Momentum of Switzerland.*

In the beginning - as most of the watch companies do - I worked with various OEM manufacturers in Switzerland, who produced many thousand watches for me, which have been sold in various countries through classic distribution channels.

However, I had to learn, that working with OEM manufacturers and suppliers is very difficult. For a number of years I fought with well known problems, such as the long delivery times, followed by the usual delays in delivery, technical and quality problems and of course unpleasant minimum order quantities. In 2001, the first time the essential problem regarding the availability of mechanical movements appeared and it was obvious that the situation would not improve in the future.

#### *The New Vision*

In 2004, I started to restructure the company with the vision to create and manufacture beautiful handmade timepieces, made under inclusion of old technologies and traditional craft with the premise that no single part is made by CNC machines, not depending to suppliers and all working steps done with my own hands, „Manu Propria“

George Daniels wrote in his book „Watchmaking“, that a quality product is not only the result of the most precise machines but can be achieved by skilled craftsmen mastering the simplest tools. Today my atelier is equipped with many useful hand



*Staircase view from the Angular Momentum atelier downwards*

operated machines made between 1920 and 1980, machines that operate within the tolerance range of 0.05 mm after careful revision.

With the years I improved my skills to manufacture watchcases, crowns, buckles, dials, hands and other necessary metal parts with my own hands. My other artistic skills allow me to make all the artworks by myself, such as „Verre Églomisé“ miniature paintings, engravings, enameling, Urushi lacquering and some more techniques I have developed in the past years.

### *Movements*

The restoration of movement and adaptation work for modules was a learning-by-doing process over the years and bases on advice from experienced fellow watchmakers. My philosophy of art and craft also manifests itself in the field of watch movement used in my timepieces. Today, only old movements made in the golden era of Swiss watch making between 1950 and 1980 are used as a whole or as parts to complete my watches.

All the movements are of new-old stock quality and found and purchased from old assembly companies or specialized dealers. The quality of these movements and parts in term of longevity and reliability is excellent and probably surpasses the quality of modern industrial produced movements.

The movements are completely disassembled, the parts controlled, cleaned, assembled and tested by myself.

### *Exclusivity*

Not content with mass-produced watches or limited editions, an increasing number of watch collectors are now commissioning their very own timepieces.

In a world that appears to be growing forever smaller, there is a certain gratification in knowing that only one person in the whole world is walking around wearing the exact same watch.

This dream, can easily be fulfilled by the „Old“ way of handmade watchmaking while industrial production cannot.

Martin Pauli



*Martin Pauli*



*Hand made „Poetic Interworlds“ timepiece with a flying Swallow made of „takamaki“ Urushi lacquer*



*Cutter head of the Alexander 3D Pantograph built in 1964*



*High performance spindle of Alexander 3D Pantograph*



*Various stylos for Alexander Pantograph*



*Vertical adjusting wheel of Alexander Pantograph*



*Hand made timepiece with Verre Églomisé miniature painting of a blue flower bouquet*





*Cross table and Trypan holder of Schaublin 120 precision lathe built in 1982*



*Watch case milling process on the Schaublin 120 lathe*



*Different type of watch cases made on lathe and milling machine in the atelier*



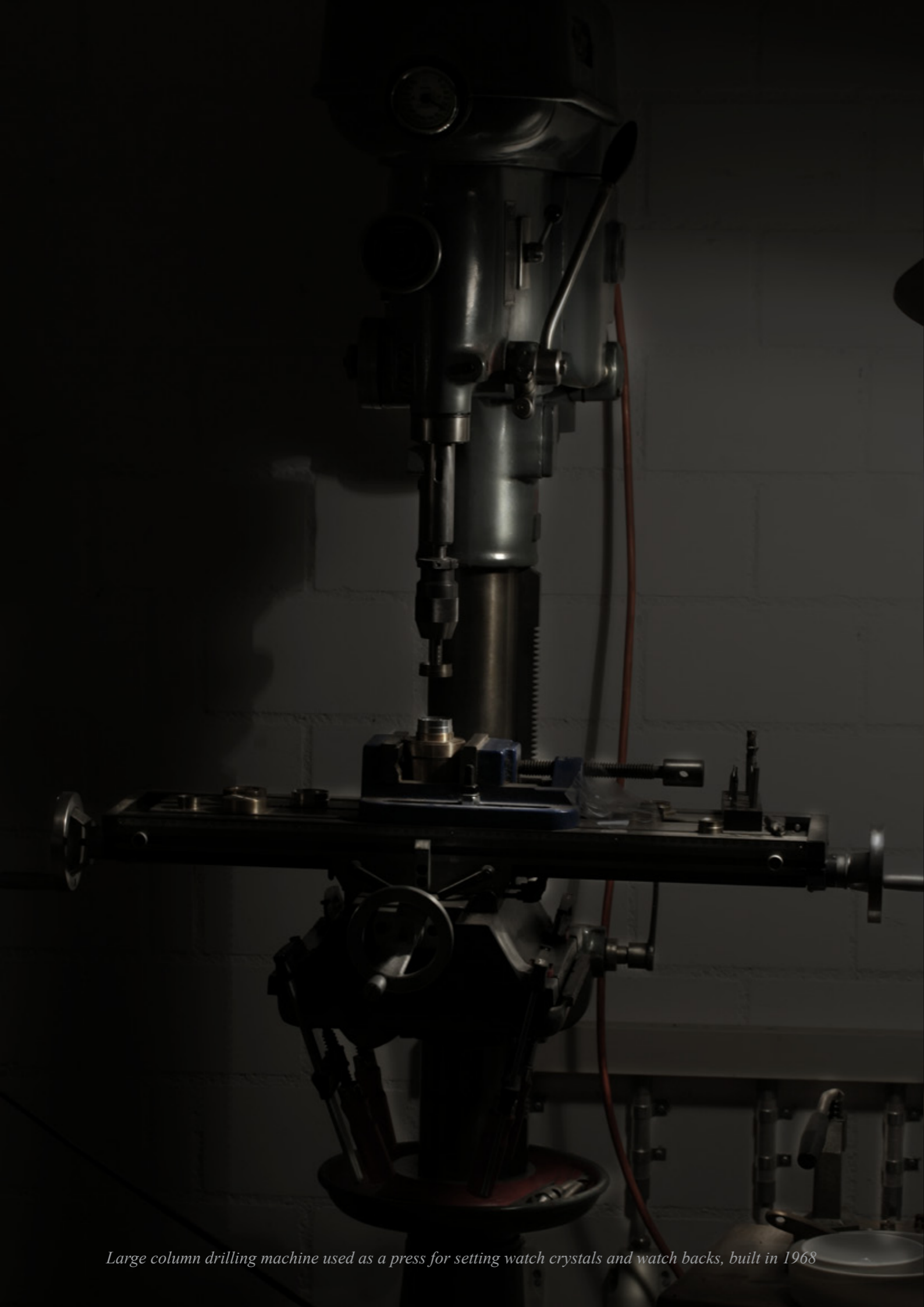
*Schäublin 120 precision lathe built in 1982*



*Hand made „Classic Index“ timepiece with silver dial and polished indexes*



*Schäublin 120 Lathe, bench drill, steel cutting machine*



*Large column drilling machine used as a press for setting watch crystals and watch backs, built in 1968*



*Machine for welding metal sheets, built in 1925*



*Millers and cutters*



*1.4435NcU Staybrite steel and 18 Kt. rose gold blanks for case making*



*Heavy spindle press for stamping dials and indexes, made around 1800.*



*Stamping tools and dies used on the spindle press*



*Mac computer for image processing and product suggestions*



*Bespoke watch with JLC Master Control 1000 Hours movement*



*Polishing machine built in 1998*



*Overbeck high precision drill used for drilling hand fittings and perlage decoration built in 1965*





*Hand made „Classic New Roman“ timepiece with an AS 1704 self-winding movement*



*Aciera F3 precision milling machine built in 1974*



*Oil container and „Posage“ for watch hand setting, hours and minutes*



*Brass, bronze, aluminum, steel, copper, silver tubes of various length and diameters*



*The atelier seen from my engraver bench, in the foreground chisels which I use for engraving and repoussé*



*Various Pliers*



*Tools at on of my jeweler working benches*



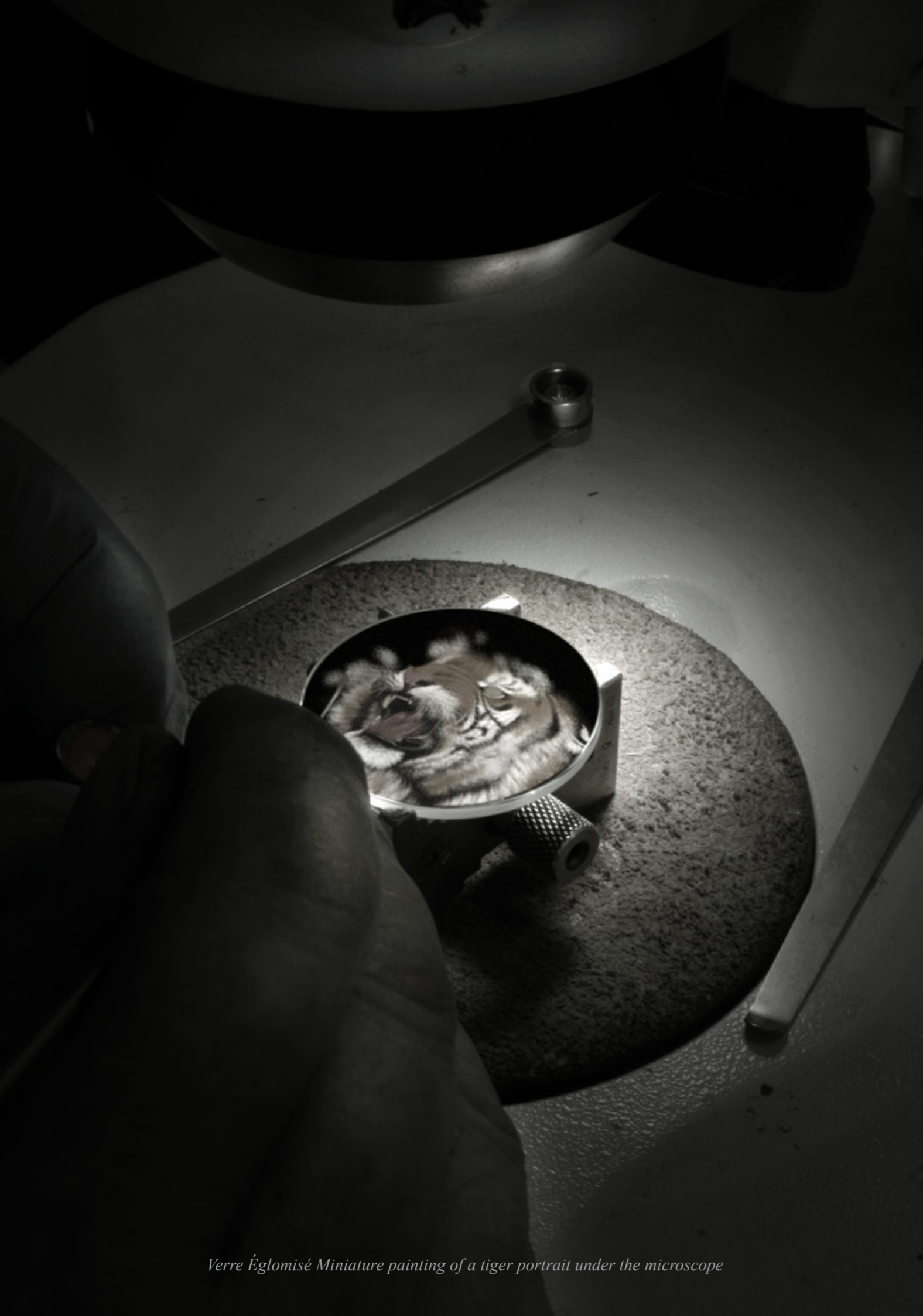
*Various Files*



*Microscope x10 /40 that I use for fine works on movements, engravings and to execute miniature paintings*



*Some Verre Églomisé miniature paintings on sapphire watch crystals*



*Verre Églomisé Miniature painting of a tiger portrait under the microscope*



*Furnace for casting metal alloys and burning enamel dials*



*Verre Églomisé miniature painting on the reverse of a sapphire watch crystal*



*Working on a Time Explosion sculpture timepiece watch case*

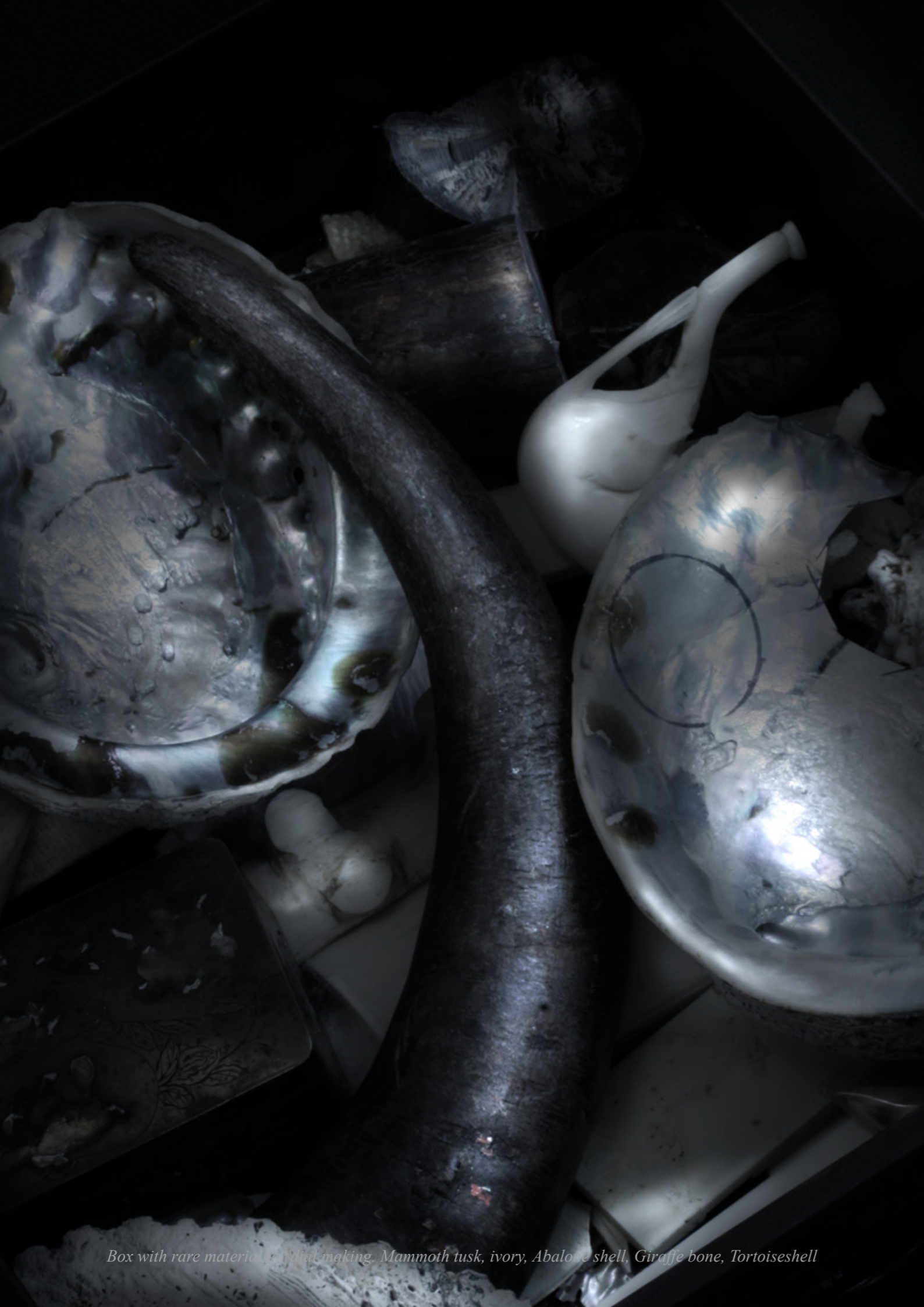


*My working place for Urushi lacquering*



*Urushi lacquer dials*





*Box with rare materials for lacquer-making. Mammoth tusk, ivory, Abalone shell, Giraffe bone, Tortoiseshell*



*Quail egg shell used for decorative inlays for Urushi lacquering*



*Japanese sword „katana“. 16th century*



*Objet d'Africaine*



*Propane and oxygen soldering system*



*Two hawks watching me working*



*Drawer with waste of gold, silver and platinum and some pearls between*



*Sheets of gold and platinum which I use for Urushi lacquering*



*Fine hand forged Japanese chisels „Nomi“ for delicate wood carving*



*Carving a small Ebony wood figurine „Netsuke“ of two young bears playing*



*Tab printed hour disks à „Souscription“ for digital time displays*



*Tab printing machine made in early 1960s*



*Historical food driven sand blasting machine built in 1928 (in good working condition)*



*My watchmaker bench and a second jeweler bench in the background*



*My engraver workplace with various gravers*



*Old thread drill in a vice*





*Finishing of a watch hand*



*Two long knives I have made some years ago, today used as letter opener*



*Tool set for servicing, disassembling and assembling movements*



*Thoughts on a 3600 hours power reserve extension for a movement*



*A view on boxes containing different historical movements manufactured between 1955 to 1980*



*Alarm movement, caliber AS 1930, manufactured 1969*



*Assembling a hand-winding movement, caliber FHF 96 from the early 1960s*



*Ebauche parts of the Caliber FHF 96*



*Jacot tool clamped in the vice*



*A coiling Dragon carved in low relief in stainless steel*



*Chinese temple vase of 1.70 m height, 20th century*



*My eye glasses with magnifiers*



*Hand made „Smooth Diver“ timepiece with heavily glowing „Email Lumineuse“ dials*



*Fine deep black smooth Japanese suiseki stone from Setagawa (Seta River)*



*Gypsom casts of old jewellery and jewelry dies form early 20th century*

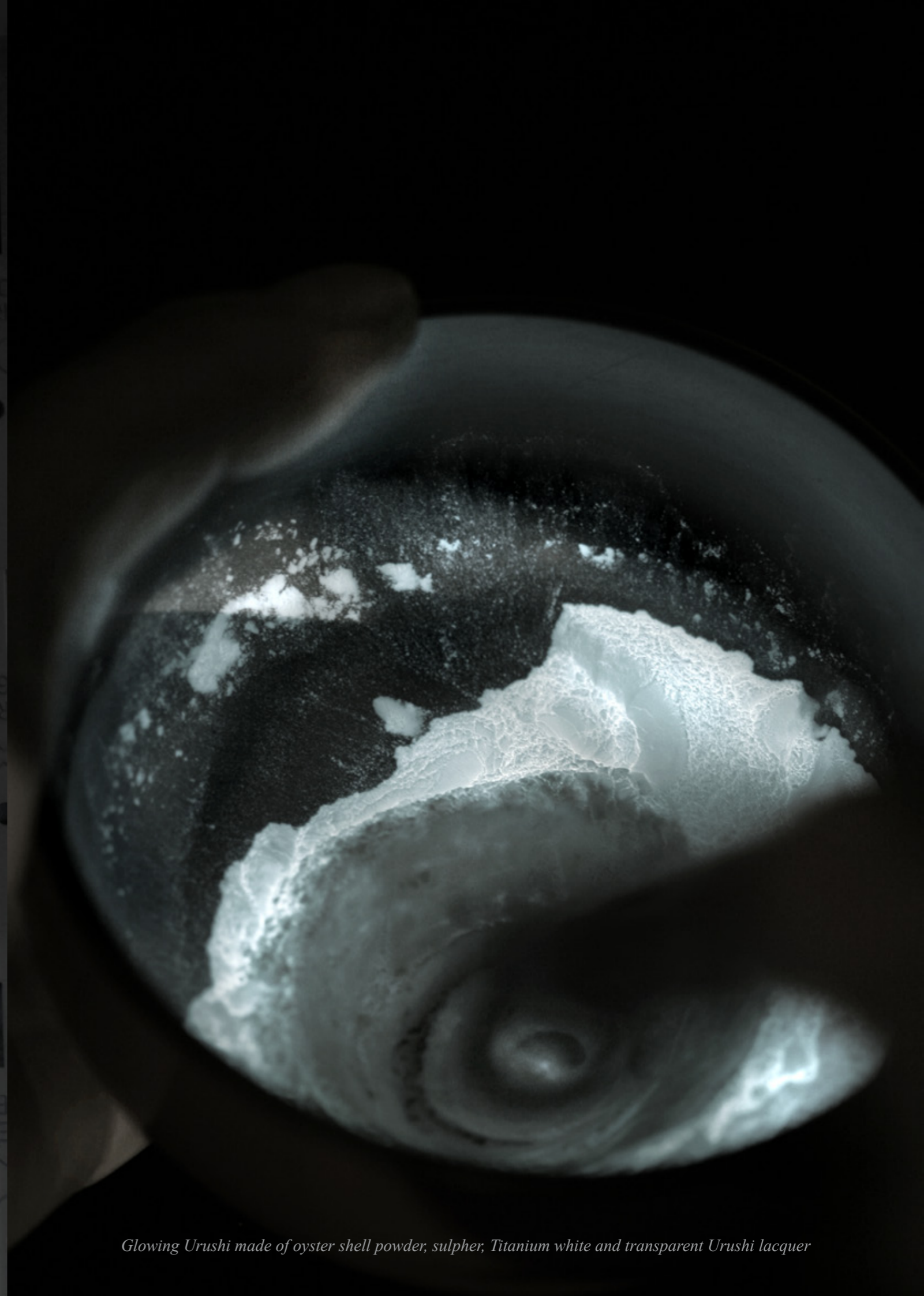


*Water resistance testing machine*





*Dry stalks of the Horsetale plant which are used for grinding and polishing.*



*Glowing Urushi made of oyster shell powder, sulphur, Titanium white and transparent Urushi lacquer*



*Custom made iron stair cupboard built after a wooden Japanese „tansu“*



*Hand made timepiece with „ishimeji“ Japan lacquer dial and polished indexes*



*My favoured chair*



*Part of my library*



*My personal „Classic“ Mother of Pearl dress watch with four polished indexes*



*Movement testing machine Vibrograph with tube amplifiers*



*Elma „Super Automat“ movement cleaning machine from 1966*



*Hand made „Verre Églomisé“ timepiece with a miniature painting of colored flower bouquet on white ground*



*Chinese Foo dog (Guardian Lion) made of root fragments. 19th century*



*Large wood grouse*

Super

Panasonic



*Back of a timepiece with hand engraved silver medallion*



*Japanese antique doll from the 1920's*



*Objet d'Art Africaine*



*Bronze censer, Tibet, early 20th century*





*Brush pot. Gothic dragon on a fountain with roses. iron, Historicism around 1850*



*Hand made, „Verre Églomisé“ pocket watch with a miniature painting of a flower bouquet*



*Part of my extended watch book library*



*Trees in the factory backyard*



*Ruin of an ancient water container in the factory backyard*



*Clouds over the factory*

*100 views of the Atelier*

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*Timepieces and images by Martin Pauli*