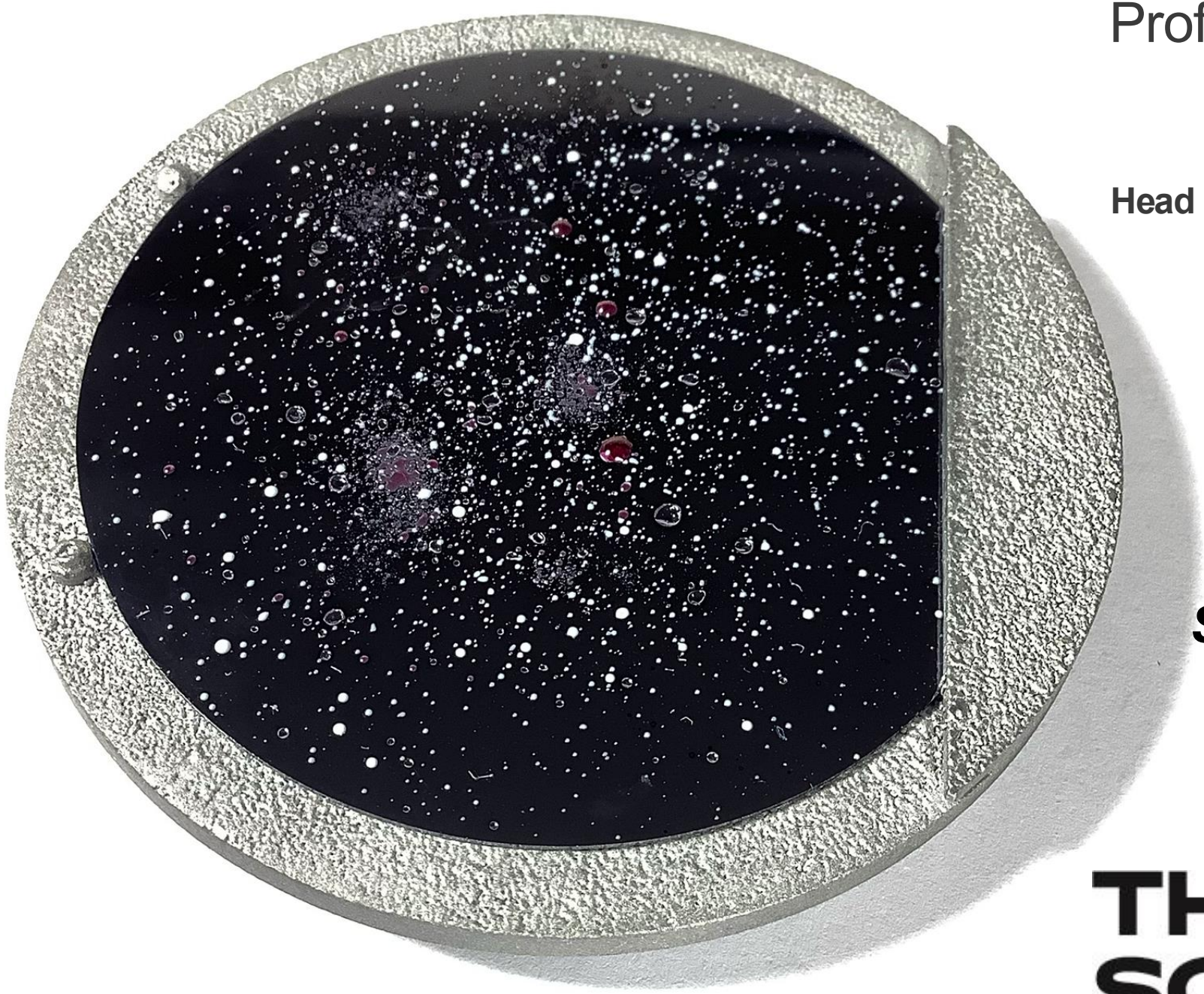


Professor Stephen Bottomley

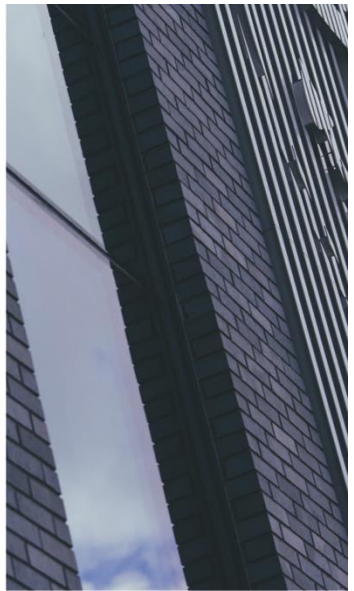
Head of School of Design

Surface Landing

THE GLASGOW SCHOOL OF ART


Inverness
Dundee
Glasgow
UNITED KING
nderry / Derry
Belfast
Dublin
alway
RELAND
Liverpool
Leeds
Manchester
Birmingham
Cork
Cardiff
London
Plymouth
Dover
Southampton
GLASGOW
SCOTLAND


MUNICIPAL
SCHOOL
FOR
JEWELLERS
SILVERSMITH

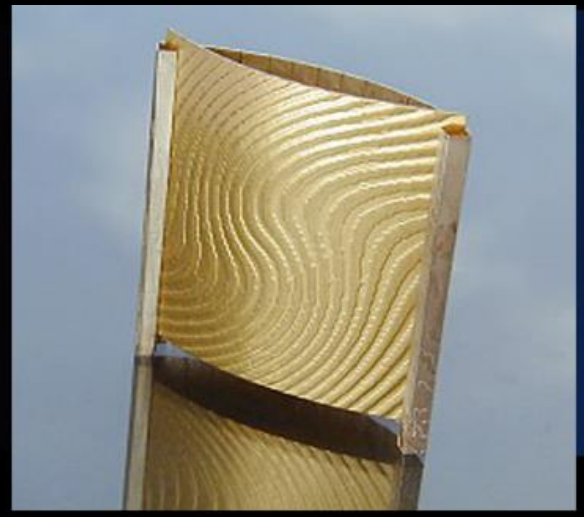


Rectangular Fan brooch,

Silver & Stainless Steel, 1988

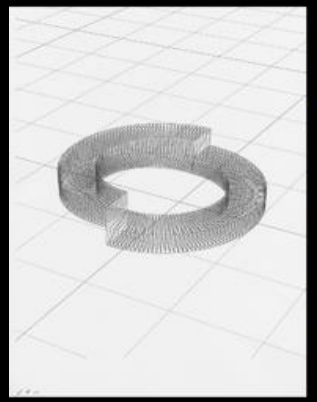
Helix bangle, 1990

Silver & gold leaf on mesh



Frame Brooch, 1998,
18 carat gold
Collection of South East Arts , Hove Museum and Art Gallery

Ruff Necklace, 1998
Sterling silver
Private collection USA

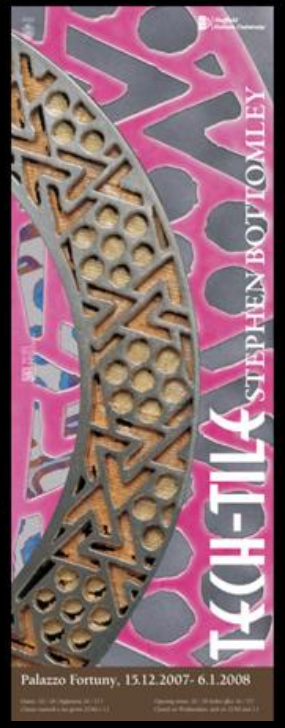


Orbit Ring, 2001

CAD drawing
from rapid prototype

Star badge,2001
Steel and enamel
(detail)

Golden Square, 2012,
Silver, gold and enamel
National Collection of
Museums of Scotland, Edinburgh



Stellar Pendant
2014
Copper, silver, enamel, rubber
and diamond dust

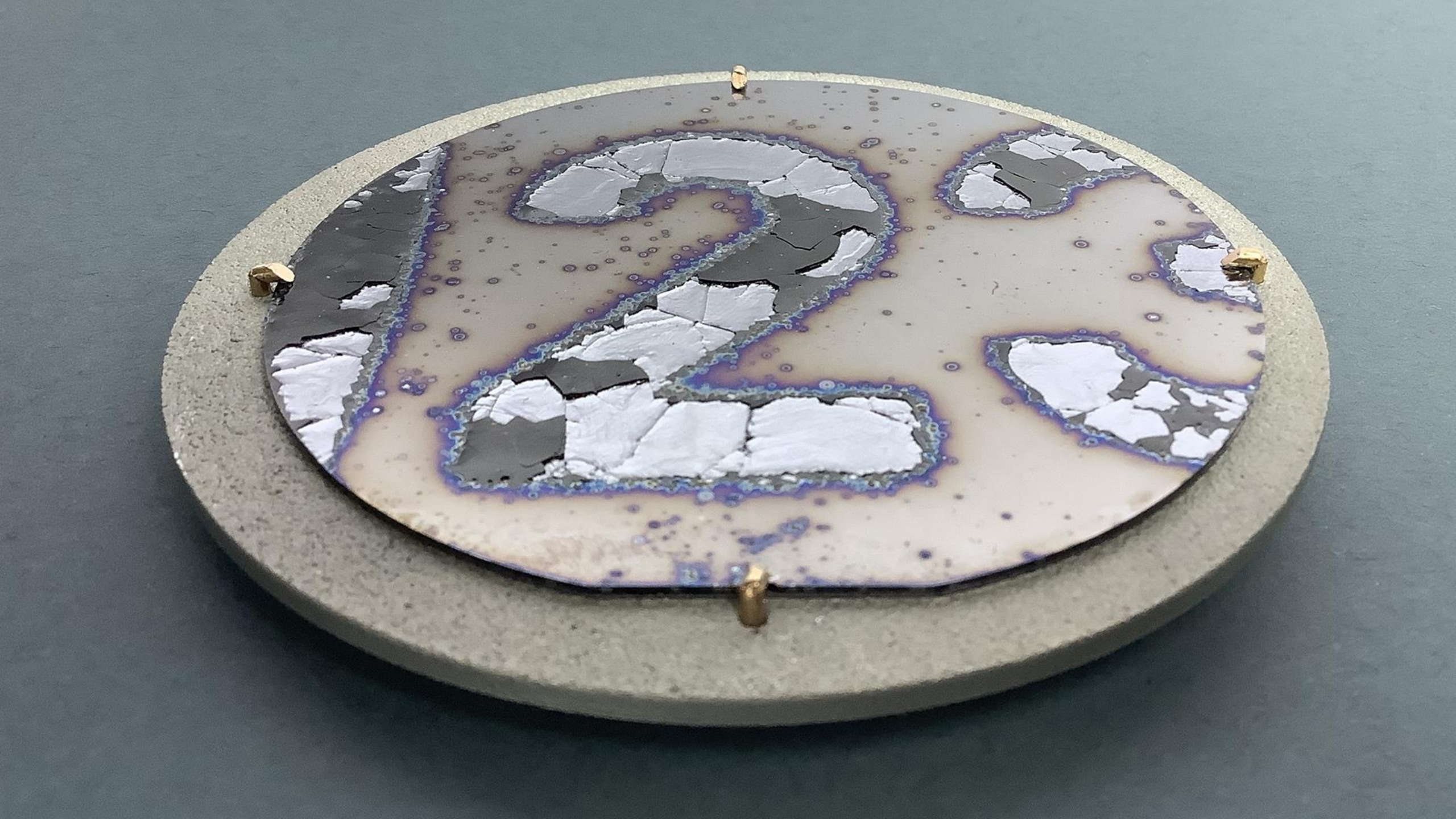


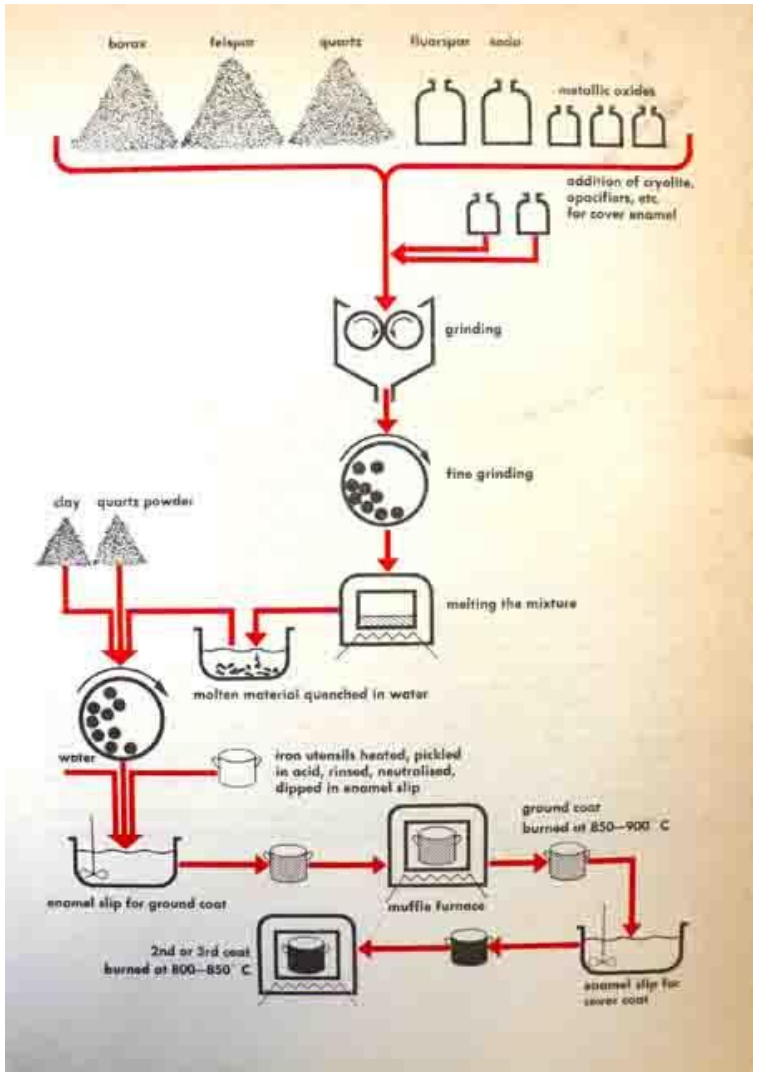
Photo: USPS

S. Bottomley , firing Drapes, UWE, enamel research centre 2007, Photo E Turrell

Creativity + Science Enables Exploration;
Exploration Enables Science + Creativity

The STEM bit....Science , Technology , engineering and Maths

Elizabeth Turrell and Stephen Bottomley in her studio in Bristol



How Things Work 1: The Universal Encyclopedia of Machines Paladin

Vitreous enamel is also known as porcelain enamel or glass metal.

This metal/ceramic/glass combination allows the end product to share the Best properties of each material.

It offers the possibilities of metal combined with a glassy, corrosion resistant skin that is fireproof.

This material used since ancient times is still evolving and developing with the advent of new technologies and challenges

E.Turrell 2022

Glassy flints and silica sand

Galettes of enamel made in France in the 1860s

Lump enamel ready for grinding

Colour is made by the additions of metallic oxides and salts e.g.: blue - cobalt oxide, and arsenic, yellow - antinomy acid and silver oxides, green - cupric oxides, chromium oxides, red - gold chloride, cuprous oxide, purple - cobalt oxide and manganese dioxide, black, combination of ferric, chromium, cobalt, and cupric oxides, brown - ferric chloride, manganese carbonate.

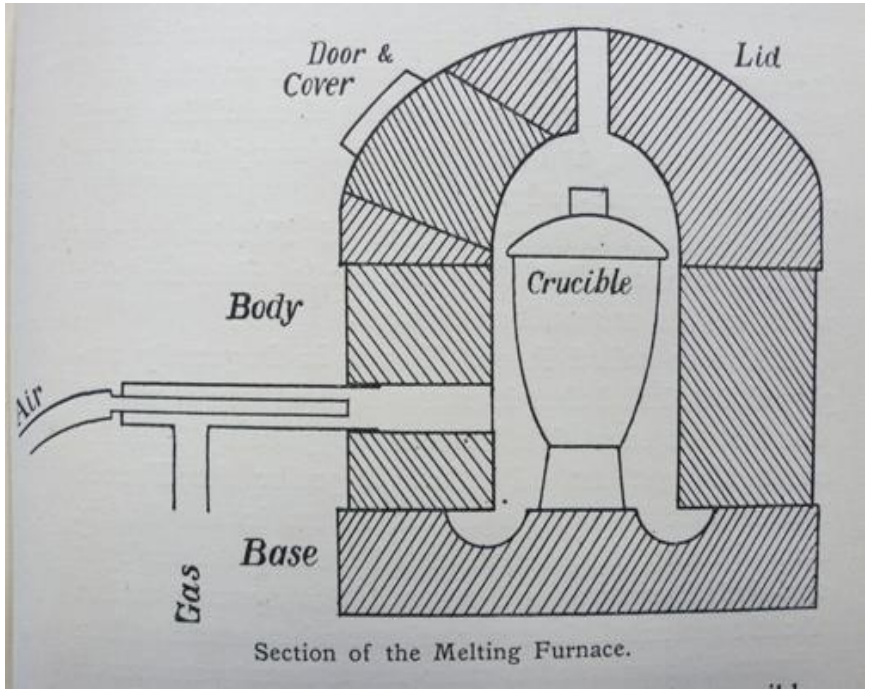
Examples of Industrial and Jewellery enamel

Top: Industrial or wet-process enamel - application can be by spraying, pouring or brushing

Bottom: Enamel ‘frits’ before the milling process to create wet process/industrial or slip enamel

Jewellery enamels for sifting or wet packing

Furnaces: Making small quantities of jewellery enamel



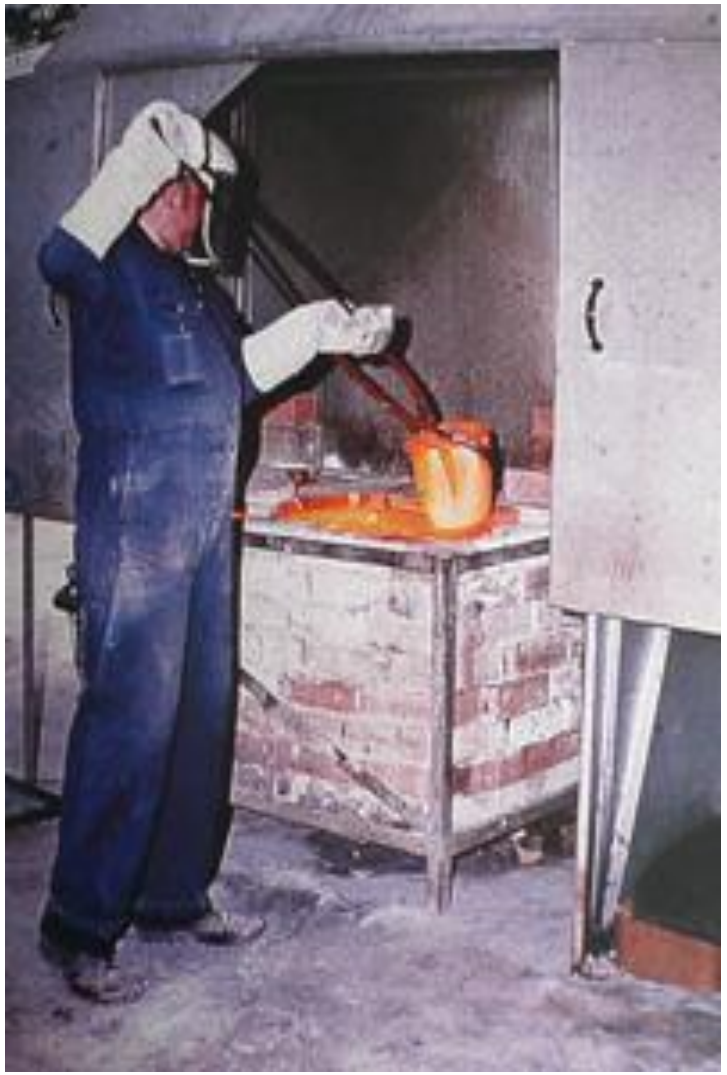
Plan of a 'melting' furnace

19th century recipe for flux (clear glass) for copper and gold

4 parts silica, 6 parts minimum, 12 parts nitrate of potash

or 4 parts optical glass, 3 parts minimum, 6 parts nitrates of potash

Minium: Red lead/ oxide of lead

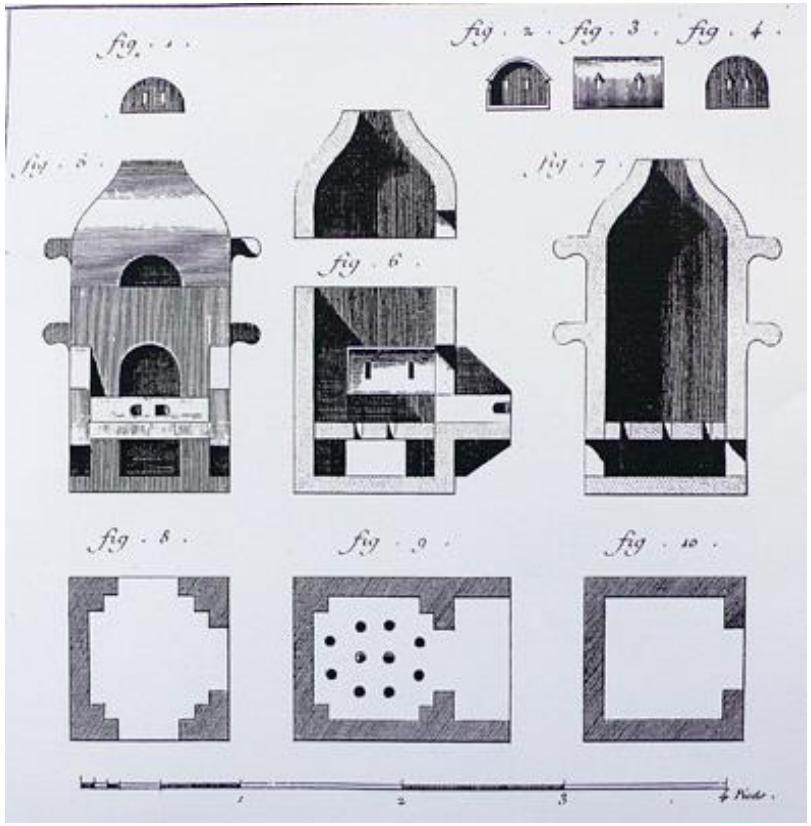


Removing the crucible the melted ingredients of enamel from the furnace

Milton Bridge enamels, Stoke, UK
Pouring a new batch of
transparent Red enamel 2018

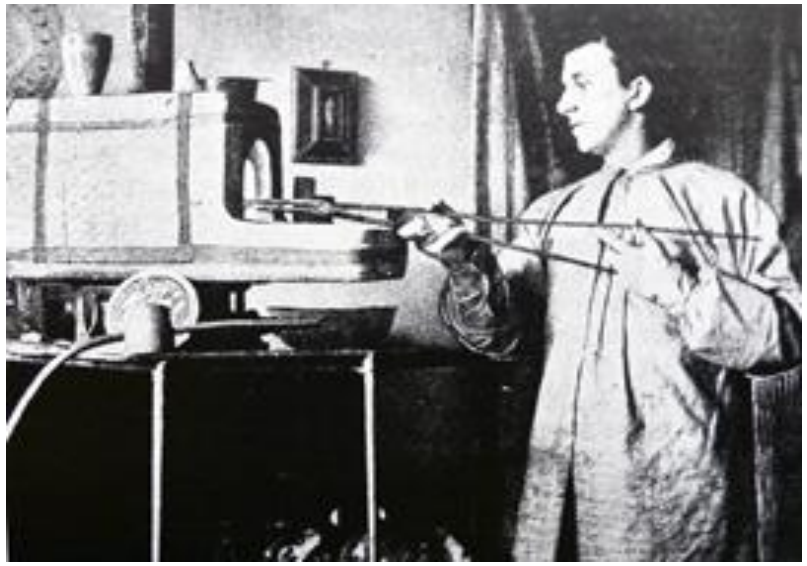
Illustration from Encyclopedia of Trades and Industry 1763

Dutch Enamelling in the 17th Century
Gravure van Jean Toutin 1619 vit “Le portraitminiature”
Published by Frits Lugt 1917. P.N. van Kampen & fils Amsterdam



Plans of an enamelling furnace

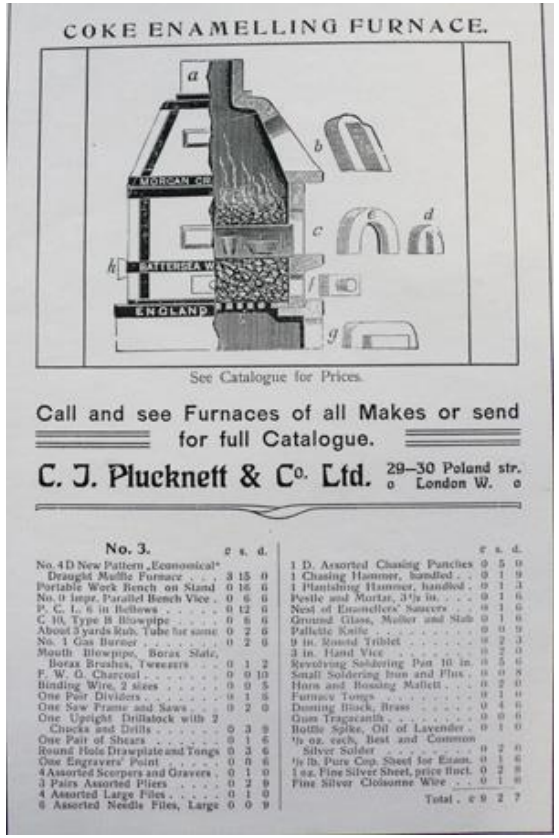
Coke enamelling furnace from the 1900s

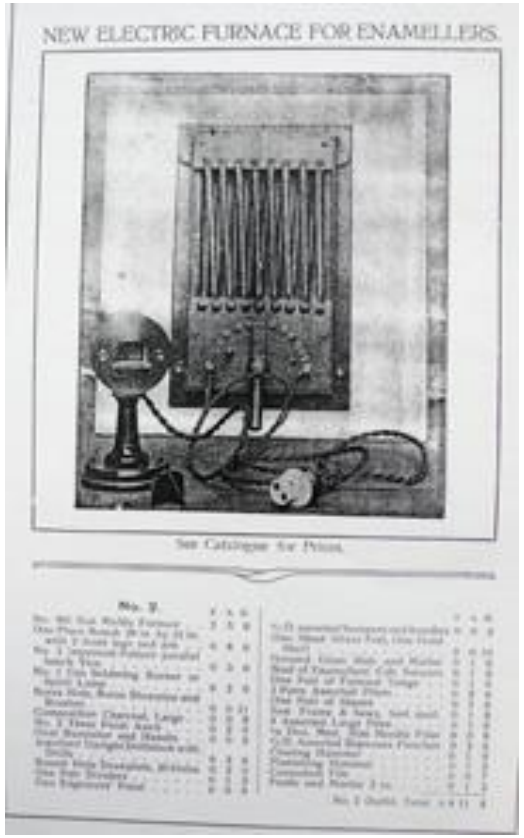


Enamel kiln - coke fired collection Museum der Arbeit Hamburg Germany

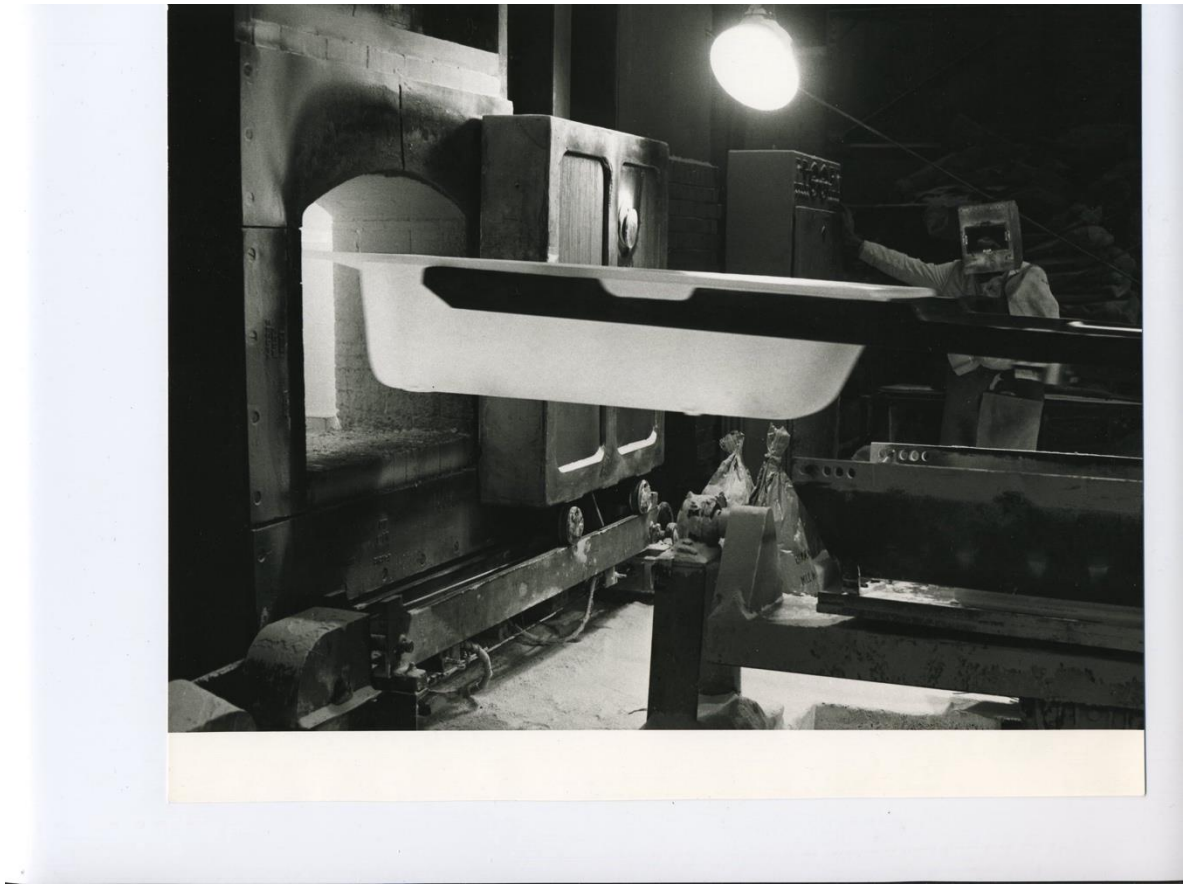
Ernestine Mills Arts and Craft artist and suffragette (1871-1959)

Gas Enamelling Furnaces 1900s CW Plucknett & Co Ltd





Enamelling Baths



THE LUSTRON HOME

No other house at any price has features like these . . . .

The Lustron Home is the result of American industrial and engineering "know-how" applied for the first time to home building.

It is made of porcelain enameled steel . . . the strength of steel and the permanent colorful beauty of porcelain, inside and out.

It is built in a factory to give you the benefits of volume production and dimensional precision. It is an engineered home, far removed from the technique of hammer and nails. It represents the results of years of effort to develop efficient, low-cost, mass-produced homes.

Your choice of colors, in beautifully subdued shades, opens up an entirely new concept of color harmony in home design and decoration. You get greater variety and practically unlimited blending possibilities with the new Lustron Home.

You never need to repaint, redecorate, or reroof. Sunlight, salt water, or chemical fumes cannot fade or stain finish.

Heated by radiant panels. Lustron's radiant panel heating system is the most advanced of its type. Smooth, even rays of heat are radiated from the ceiling. No radiators, no grilles, no circulating currents of warm, dust-carrying air.

These construction features alone put the Lustron Home far in advance of any other home available today.

And the beauty is an average American family can afford it. If you make $50 to $60 a week, you can buy a Lustron Home —a better home than you probably ever dreamed you could own.

THE LUSTRON HOME—A NEW STANDARD FOR LIVING

Size—five spacious rooms, plus large utility room—total of more than 1,000 square feet.

Design—follows growing trend toward contemporary ranch-style architecture. Choice of colors for interior and exterior, all in new glossy finish porcelain enameled steel.

Permanence—fireproof, dirt-proof, rustproof, termite-proof, vermin-proof, rotproof. Your only cleaning materials are soap, water, and a damp cloth.

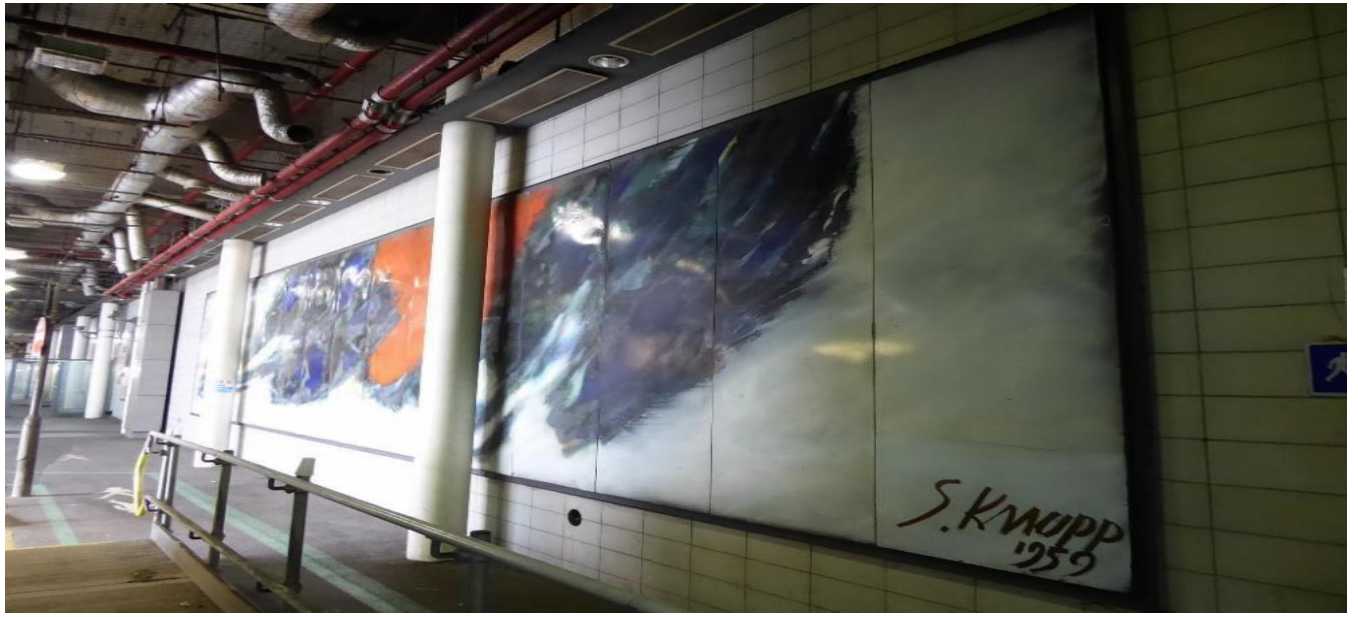
Erection—The Lustron Home will be shipped f.o.b. Columbus to licensed builder-dealers. It can be erected on the site in three to four days, from completion of foundation to putting key in front door.

Features included in delivered price: combination dishwasher-clothes-washer, automatic water heater, automatic heating unit, exhaust fan, built-in cabinets, cupboards, "closet walls," bookcase, dressing table. All you need to buy is your own cooking stove and refrigerator and, of course, your own furnishings.

LUSTRON CORPORATION, BOX 2053A, Columbus 16, Ohio

Lustron Homes 1949 -1950 USA

Made of steel coated with porcelain enamel, Lustron Homes were manufactured like cars and transported across the USA



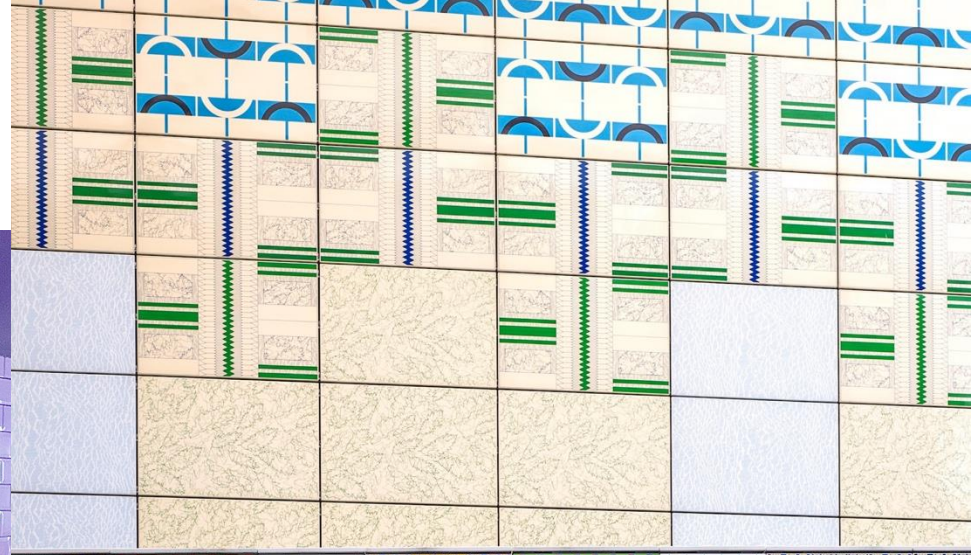
Heathrow Terminal 1, 1959

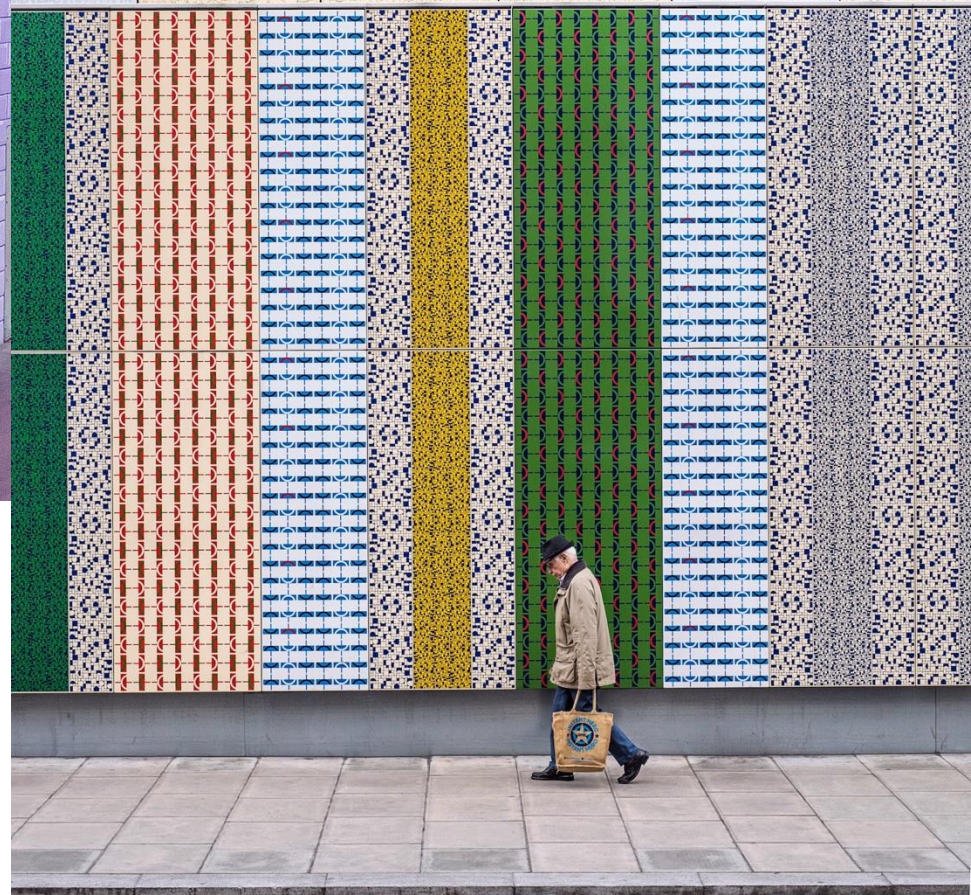
The art of painting with enamels on steel in architecture: context, development and conservation and the work of Stefan Knapp (1921-1996)

PhD researcher Cátia Weslowska
Supervisors: Dr Anne Marie Carey, Dr Sian Hindle and Professor Stephen Bottomley

Stephan Knapp enamel artwork, 1973, Olsztyn Planetarium, Poland

A J Wells Factory showroom June 2022





Art and Industry enamel symposium, 2022, Glasgow School of Art
(left to right)
David Gatrell, Senior Commercial Manager, A J Wells & Sons
Cátia Weslowska, PhD student,
Stephen Bottomley
Yinglong Li , PhD student

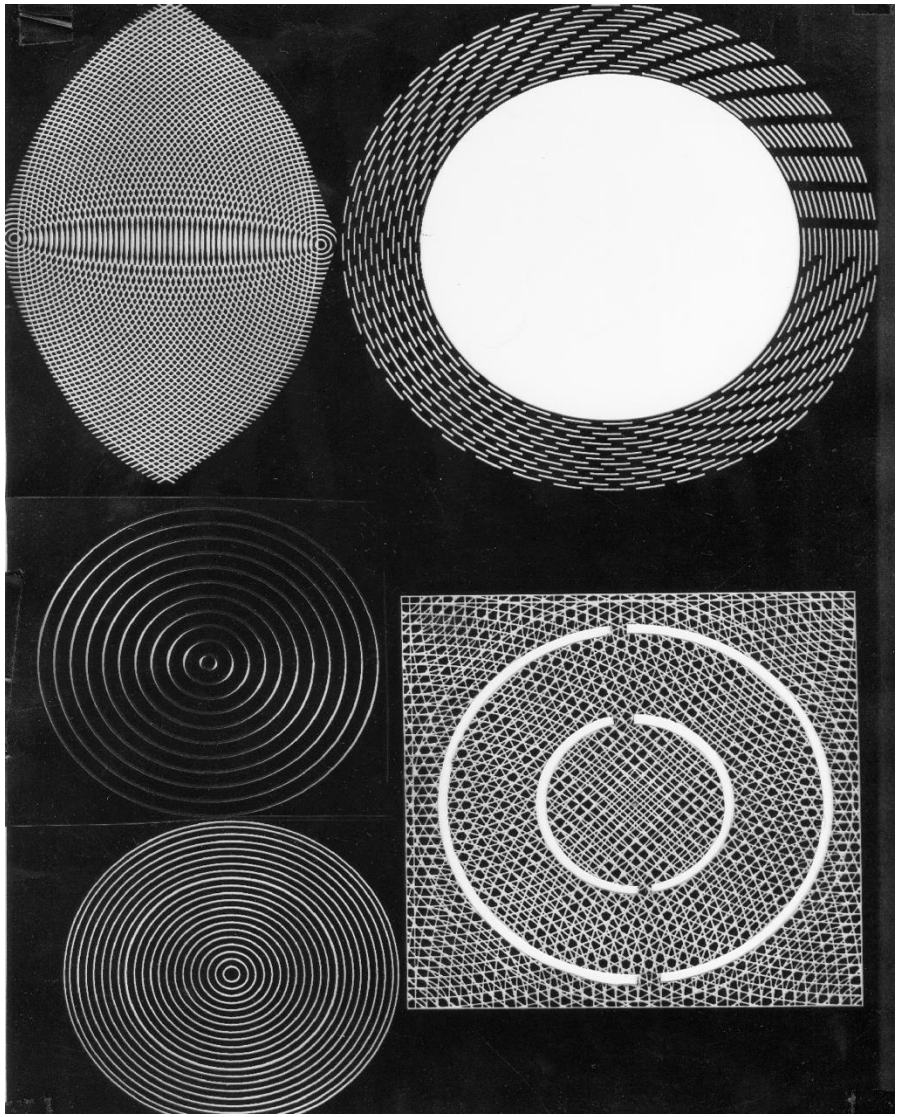
Figure 128. The opening of "MTG Crown" before being applied with enamels (left), after being applied with enamels (right).

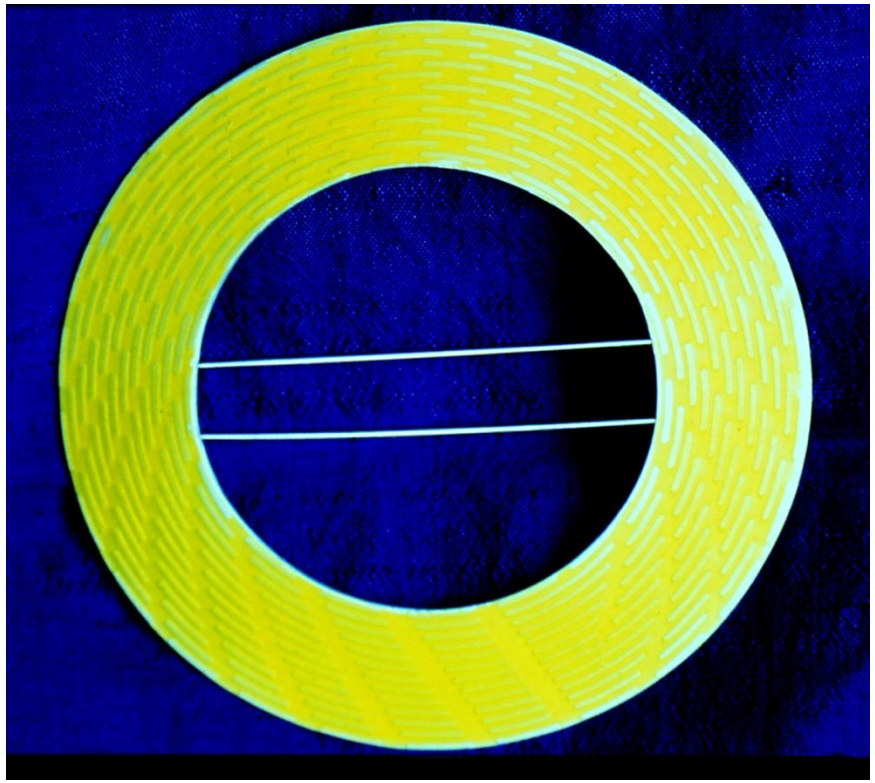
Figure 127. Filling the gaps between the metal spheres with different coloured enamels.

1996 – 1999 MA (Design) UoB

PRAXIS. "Design is iterative, interactive and a social process best undertaken in real-world situations"

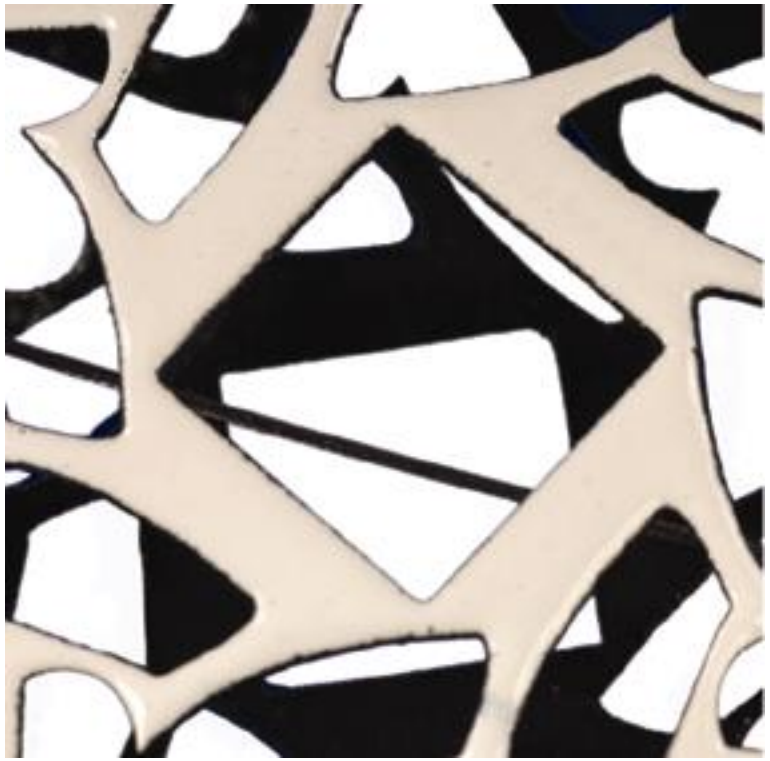
(Schön in Wallace et al 2013)





Yellow brooch, 1999
Silver and enamel
70mm Diameter

Photo tools, ink on acetate



“The preservation of the asymmetry of Fortuny’s patterns in the finished jewellery is particularly effective and clever. The effect of the small imperfections on the metal (purposely achieved by Fortuny in his fabrics as a result of great experimentation) permeates it with an almost undetectable sensation that eliminates the possibility of a trivial relation between materials and drawing”

Fuso, Sylvio, *A contemporary tradition*, Tech-tile, Musei Civici Veneziani & Sheffield Hallam University, 2007

Visiting artist 2006-10 UWE Bower Ashton Campus

Sifting the enamel, Vitreous enamel research center

Yellow Drape Necklace
(Yellow Drape
Necklace, 2008
Steel and enamel
Photo: John K McGregor
Exhibited Playing with Fire 2008-10

Tech-Tile Exhibition, Hove Museum and Art Gallery
Blue Oval neckpiece *Drape series,* 2007, Steel and enamel, 330 x 265, Photo SEB
Playing With Fire poster, catalogue produced by Devon Guild of Craftsmen, UWE and the British Society of Enamellers 2008

...of enamel works and an online
...y Elizabeth Turrell (UK), Beate
...and Melissa Cameron (Australia).

...with 23 international artists to develop
...ibition on an on-line forum to encourage
...ross-fertilization of ideas and approaches to
...us enamel.

...ttempted to fuse diamond dust to vitreous
...ot possible on sheet metal, due to the
...s of cooling and shrinking of meta, enamel and
...ion

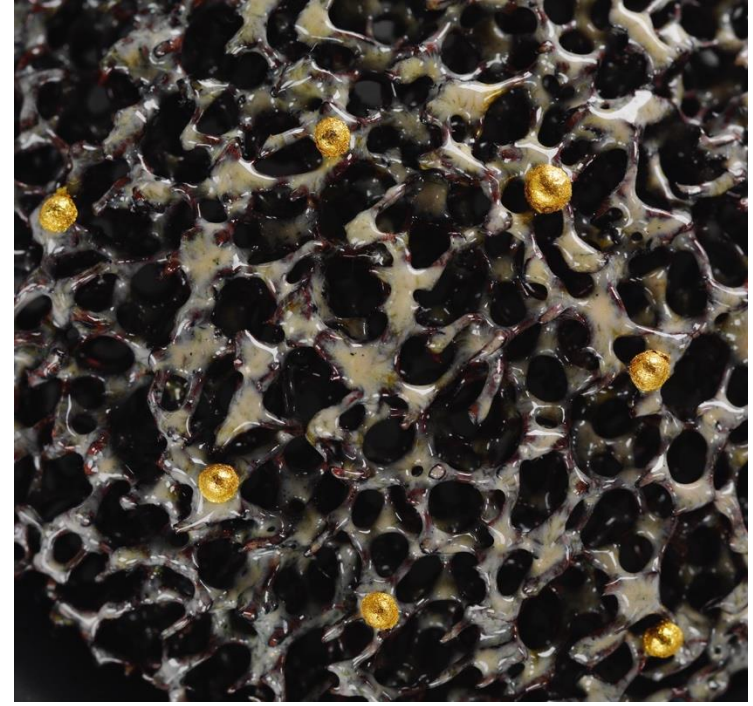
...aerospace industry has developed familiar
...e highly uniform structures that allow for the
...endable exchange of heat and energy. This
... modern reinvention of familiar base
...gh new material science as super
... for space rockets and aircraft engines.

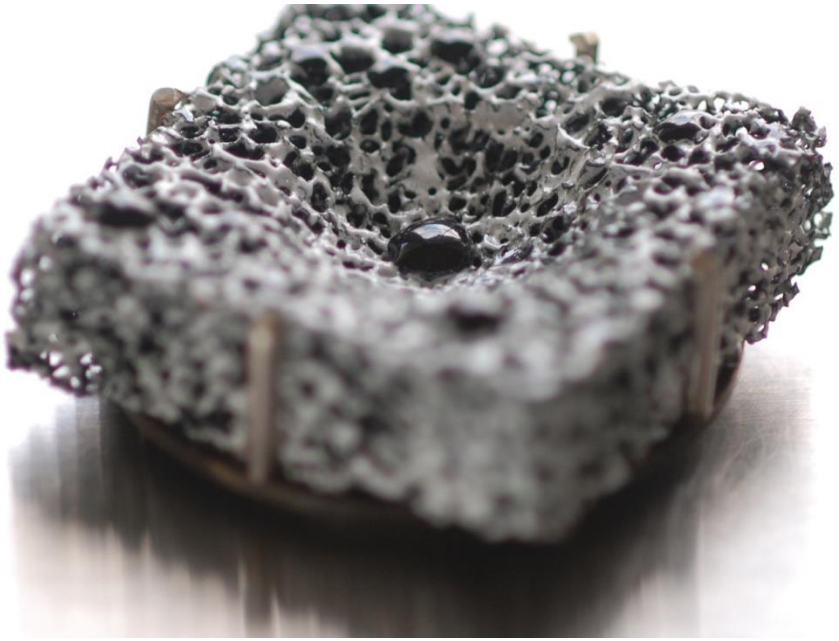
...e most challenging environments
... research a stable fusion of
...urfaces.

Heat Exchange: Test pieces

Samples
Copper foam, vitreous enamel and diamond dust

Shemer art gallery, Phoenix, Arizona, USA:
Kunstmuseen der Stadt Erfurt, Galerie Waidspeicher im Kulturhof Krönbacken, Germany
Museum Voor Vlakglas, Ravenstein, The Netherlands
Kunstmuseen der Stadt Erfurt, Galerie Waidspeicher im Kulturhof Krönbacken
Craft in the Bay, Wales





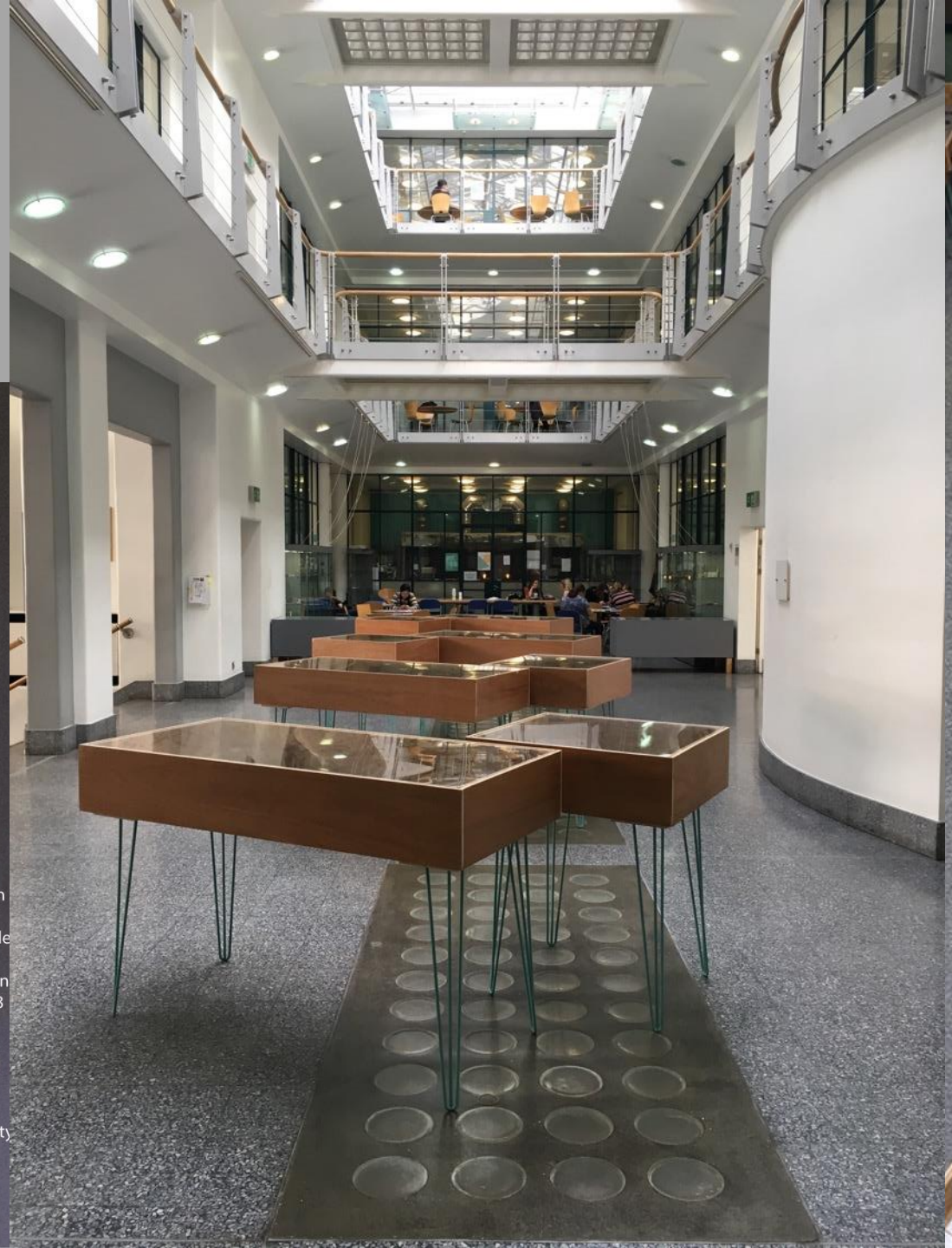
Black And White Heat Exchanger, 2012 Silver, precious metal, copper, enamel and diamond dust
Moss Brooch, Silver, copper, enamel and rubber Photos Shannon Tofts

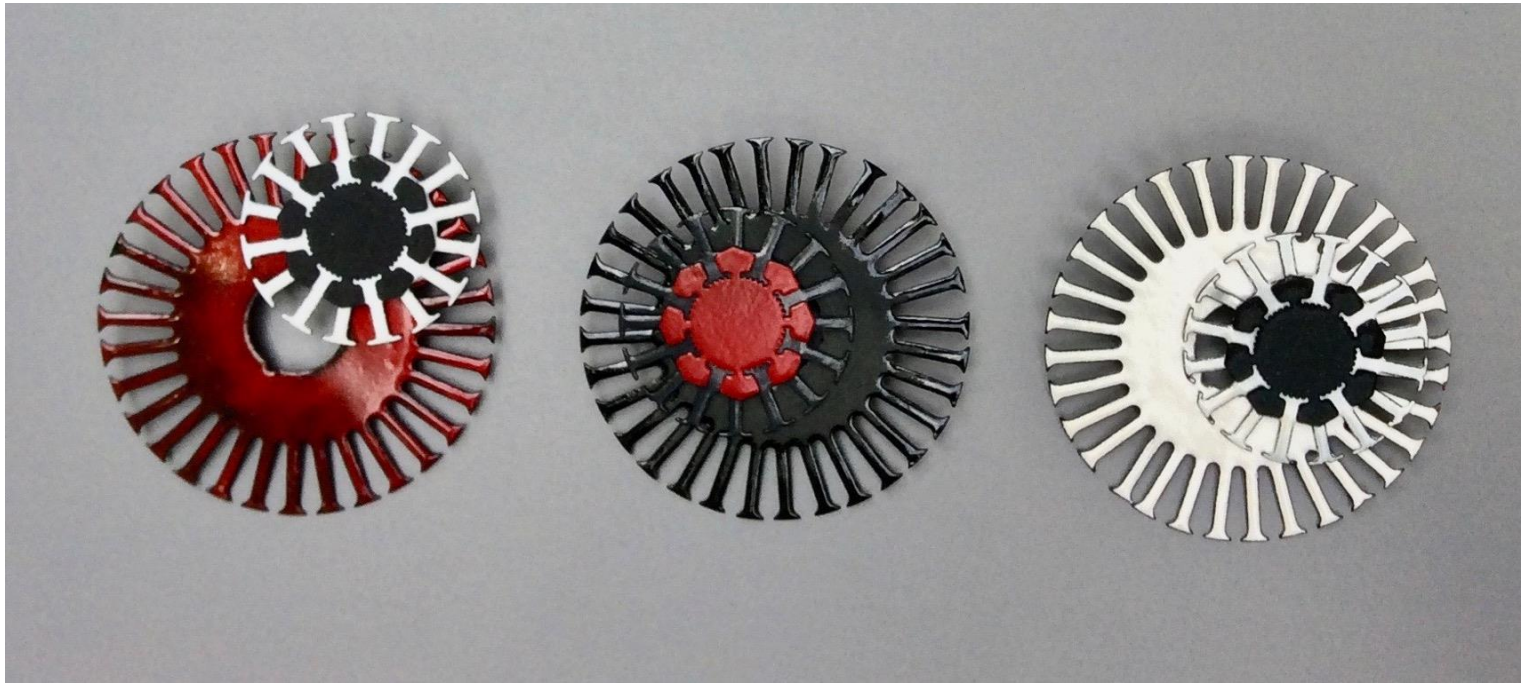

a.i.r_soj

Dauvit Alexander
Marianne Anderson
Jivan Astfalck
Stephen Bottomley
Tim Carson
Rachael Colley
Bettina Dittlmann
Christine Graf
Joohee Han
Kirsten Haydon
Jeremy Hobbins
Michael Jank
Bridie Lander
Anna Lorenz
Sarah O'Hana
Drew Markou
Toni Mayner
Simone Nolden
Jo Pond
Jo Pudelko
Rebecca Steiner
Elizabeth Turrell

21st February -17th March 2019
Museum Reich der Kristalle
Mineralogische Staatssammlung München
Theresienstraße 41, 80333 München, Germany

1st April - 18th April 2019
Vitt Street Gallery
School of Jewellery
Birmingham City University
B1 3PA, United Kingdom





Elizabeth Turrell. Title: *Widget*. 3 Brooches/Badges
Materials: *found* steel with vitreous enamel & iron spangles
90mm Diam

Stephen Bottomley
2018
Title: Watchers,
Enamel on recycled steel watch cases.

(Image of the exhibition at BIFT 2019)

Kirsten Haydon
Iron scapes

Brooches
Mild steel, enamel, stainless steel, Kariotahi iron sand
55x55x7mm Approx

Moon Impact

So entstand der Mond!

Moderation
PD Dr. Melanie Kaliwoda
Stv. Direktorin MSM

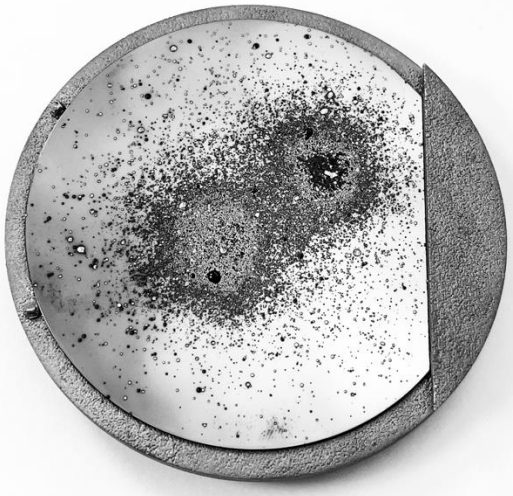
Grußwort
Prof. Dr. Wolfgang W. Schmahl
Direktor MSM

Einführung „Moon impact – a geological story"
Dr. Razvan Caracas
Senior Researcher
Institut de Physique du Globe de Paris

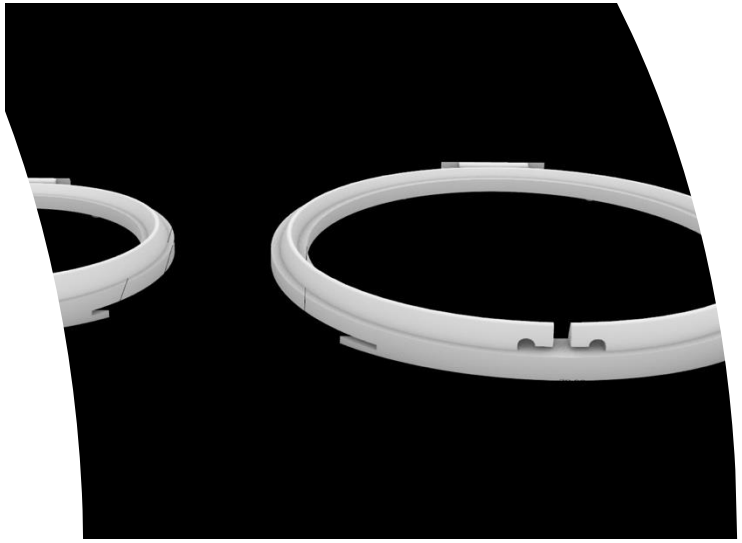
Festvortrag „Geologie des Mondes"
Prof. Dr. Harald Hiesinger
Professor für Geologische Planetologie, Uni Münster

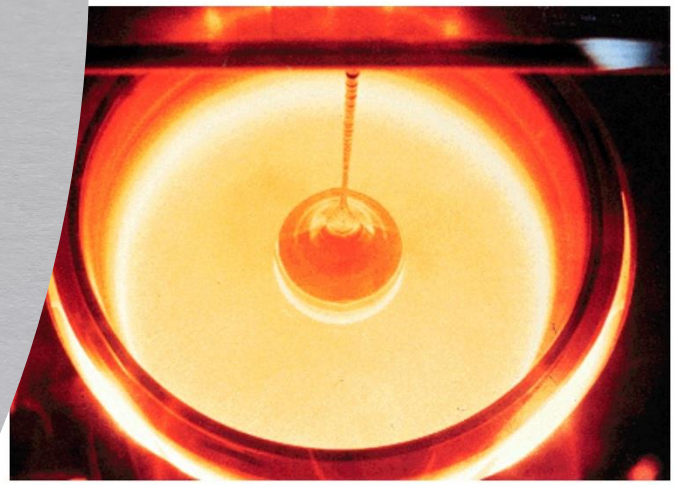
Einführung "Satellite" Jewelry Art
Prof. Stephen Bottomley
Head of the School of Design, Glasgow

Grußwort und Eröffnung der Sonderausstellung
Prof. Dr. Joris Peters
Generaldirektor SNSB



Bottomley
'Collider' 2023 brooch,
Silicon, Enamel, Aluminium, Steel

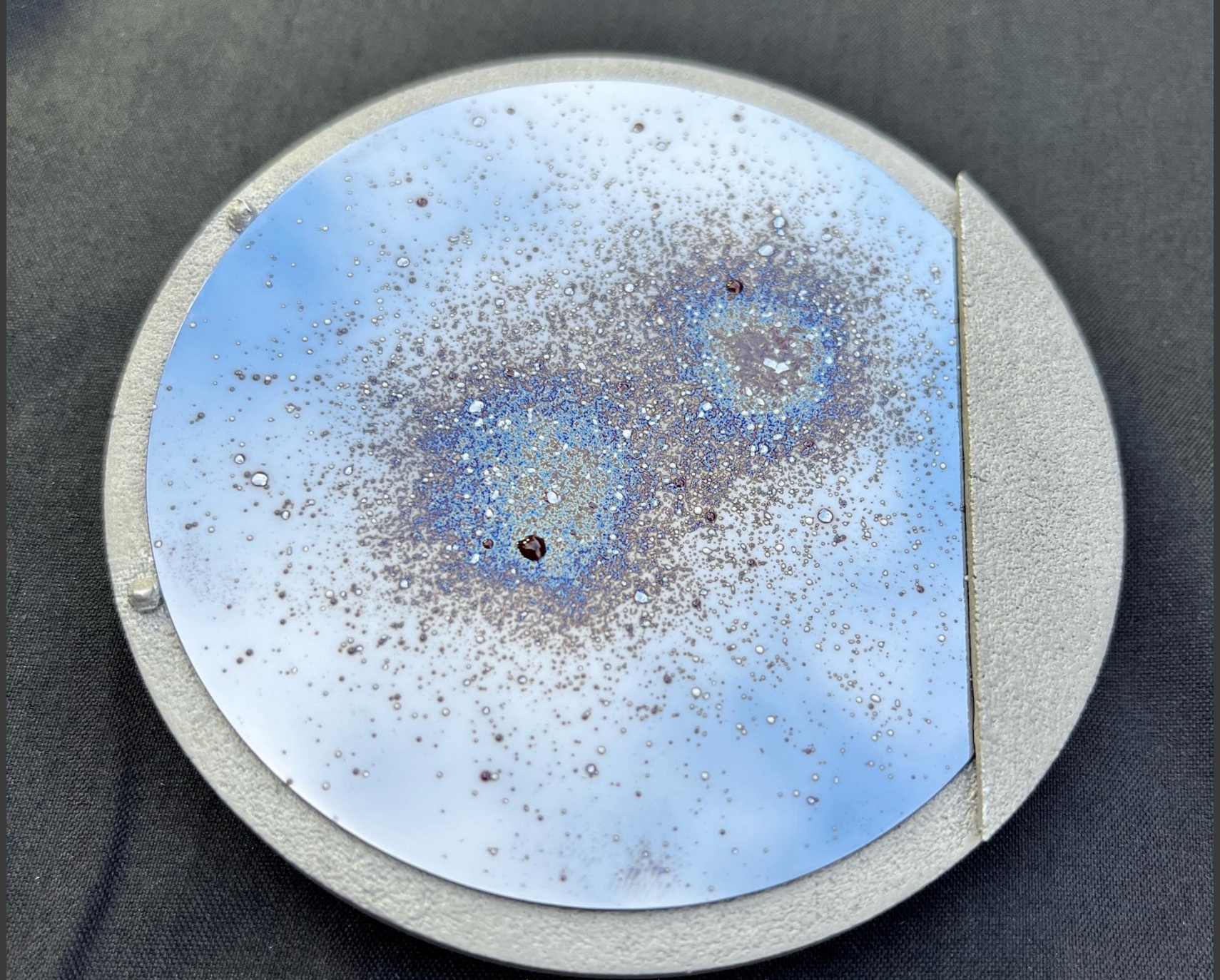




‘Collider’ 2023
brooch,
Silicon, Enamel, Aluminium, Steel


Nabertherm


Nabertherm
MORE THAN HEAT 30-3000 °C
897



"Look beneath the surface; let not the several quality of a thing nor its worth escape thee" Marcus Aurelius 170AD