

Artist Nabil Ali

Department of Chemical Engineering and Biotechnology
University of Cambridge. 2024–25





Artist Nabil Ali in conversation with Fruk Lab Scientists

Colour Compositions

Colour can evoke human emotions and maintain deeper meanings across various cultures, both symbolically and practically, through representations leading to colour compositions. Artist Nabil Ali presents a collection of colour paintings and art installations using selected plants gathered from Cambridge University Botanic Garden Living Collections to create dyes.

The extracted dyes from plants are part of an ancient tradition of colour-making that has been practised for thousands of years. These dyes were processed by the artist, supported by Fruk Lab over a one-year residency at the Department of Chemical Engineering and Biotechnology, and focused on how the dyes fixed to cellulose and protein fibres. A variety of primary and secondary colours were explored, including white from chalk and black processed from leaves growing in the department's Zen garden. Some of the plants have been used in different cultures for thousands of years on textiles and as paint, and are mentioned as dye plants in historical manuscripts across periods of time.

The artwork is ultimately organic, being a permanent feature in the department of Chemical Engineering and Biotechnology, University of Cambridge, which brings colour to the space along with a deeper meaning. Some of the plants have been used in different cultures for thousands of years on textiles and as paint, and are mentioned as dye plants in historical manuscripts across periods of time.



Hand collected chalk from Cherry Hinton Chalk Pits, Cambridge.

Artist Nabil Ali makes his own artwork and organic paint using historical recipes from technical manuscripts with some dye recipes dating back as early as the 3rd-century BCE up to contemporary practice. He explores nature and experiments with plants, processing them into colourants and testing the fixative quality on various materials (all in one multi-fabric: wool, acrylic crayon, polyester, nylon, cotton and acetate) to show which fibres are best suited for the dye.

Many plants were tested to source a stable yellow dye, with the unripe berries from the buckthorn plant (*Rhamnus cathartica*) being used in the final artwork. Other plants used in cancer treatment were processed in the work, including the Madagascar periwinkle (*Catharanthus roseus*), which makes a green-black colour, and a yellow dye from leaves of the mayapple (*Podophyllum peltatum*), both collected from Cambridge University Botanic Garden glasshouse and woodland area.

23.75ct gold was introduced to the artwork using historical gilding practices, symbolically linking the gold to gold nanoparticles used by Scientists for cancer treatment in Fruk Lab, and also using a traditional colour trend relating to indigo-dyed paper with gold writing used in ancient cultures.

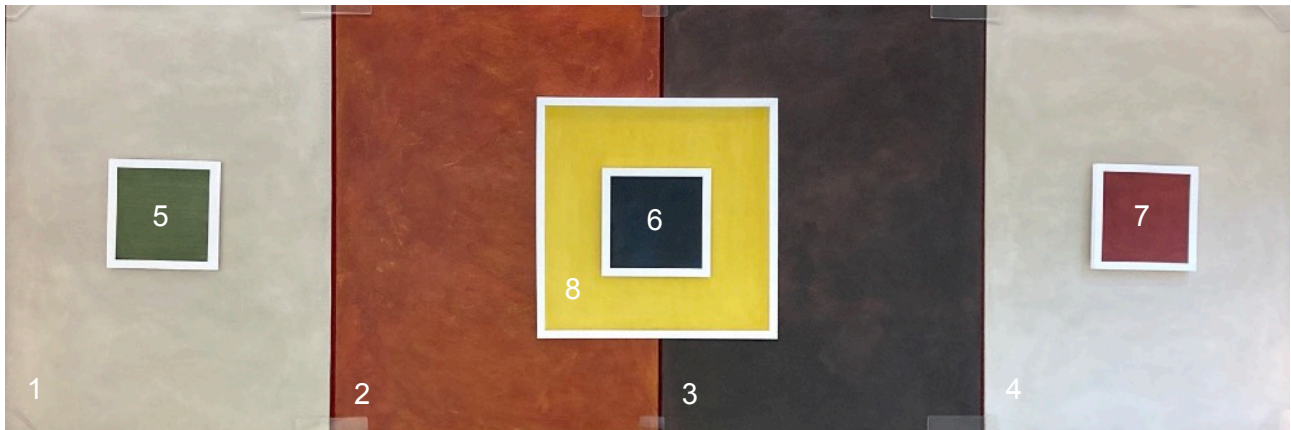
Colour Compositions exhibition – with the permanent wall art– demonstrates strong organic dyes, and applying specific frameworks to extract the dyestuff from plants, remains valid after thousands of years of making colours. The artwork is very organic and a permanent feature in CEB which brings harmonious colours to the space focusing on research and wellbeing.



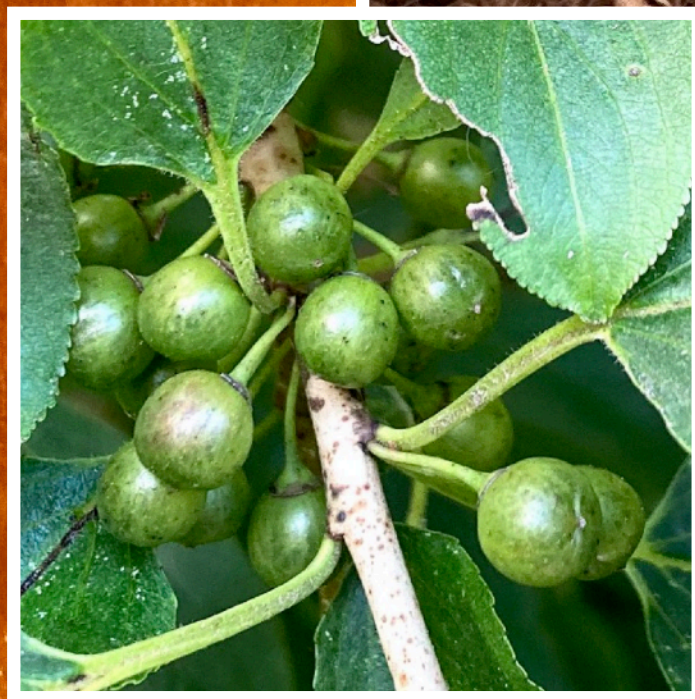


Artist commentary

The artwork has been prepared using Cherry Hinton chalk that has be powdered and sieved then added to animal glue and applied to portrait linen boards creating a surface. The vegetable dyes have been processed from plants, mixed with gum arabic tree resin and sealed using Gilboy's clear wax polish.



- 1 Cherry Hinton chalk
- 2 Buckthorn yellow over madder red
- 3 Madder red over natural indigo blue
- 4 Cherry Hinton chalk
- 5 Buckthorn yellow over natural indigo blue
- 6 Natural indigo blue from India
- 7 Madder red
- 8 Buckthorn yellow

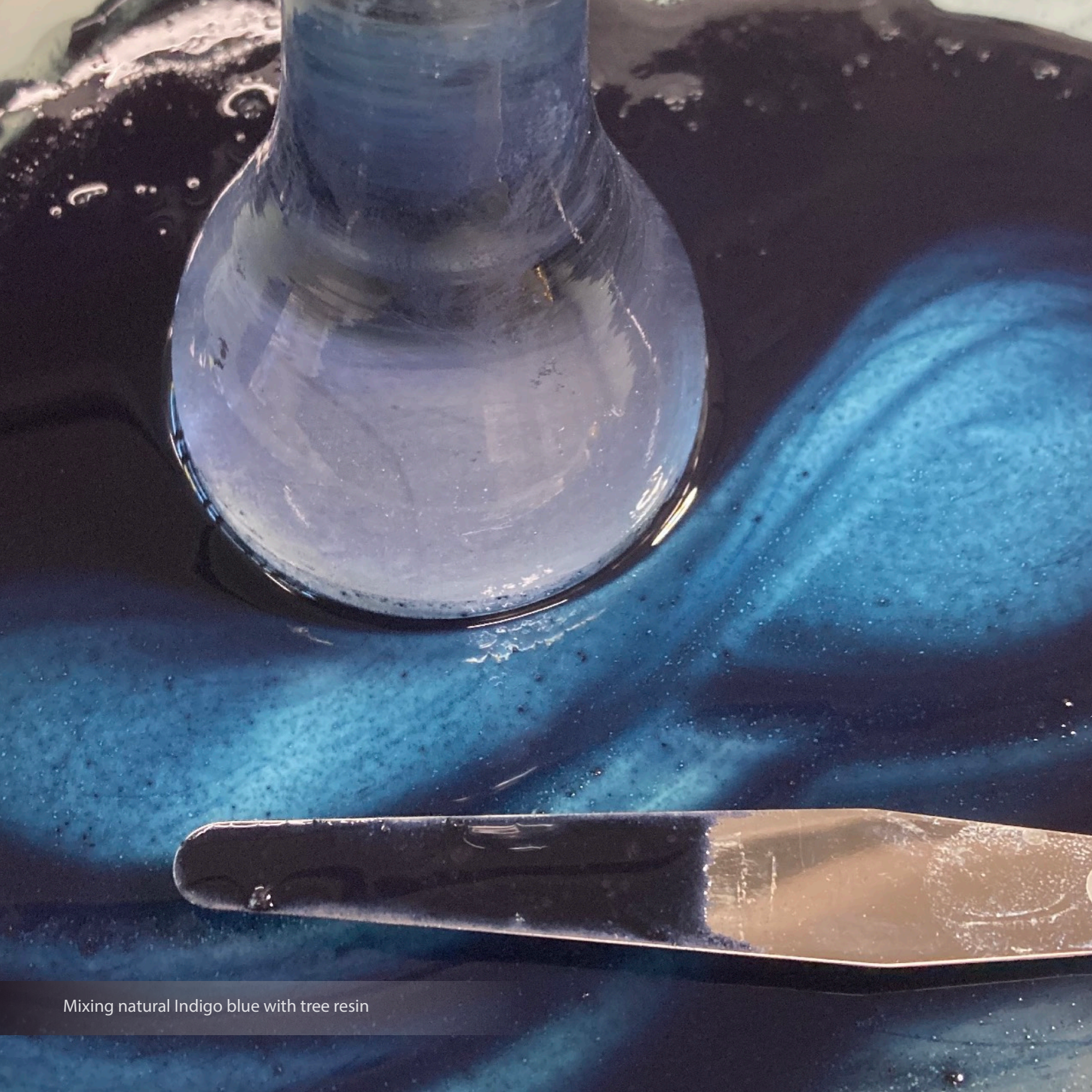


Madder root mixed with unripe buckthorn berries





Dyed cotton inside a Victorian apothecary jar



Mixing natural Indigo blue with tree resin



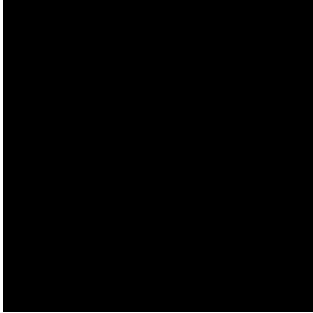
Natural Indigo blue and 23.75ct gold leaf



Plant dyed cotton | yellow cotton rose dyed with buckthorn berries

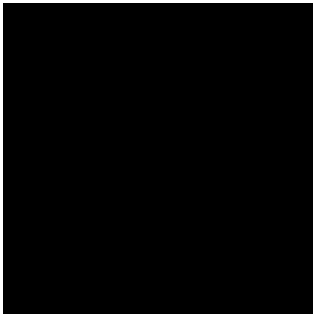


Artist Q & A's



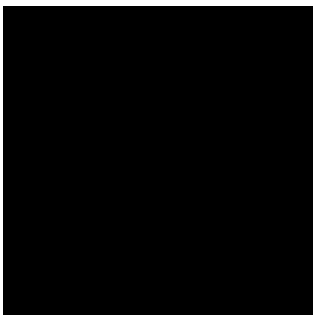
Pomegranate Black (*Punica granatum*)

Made with the waste fruit skins eaten by Fruk Lab Scientists, then heated in water with iron sulphate.



Staghorn Sumac Zen Black (*Rhus typhina*)

Made using the leaves growing in the Zen garden at CEB, then added to water with iron sulphate



Elephant Ears Black (*Bergenia crassifolia*)

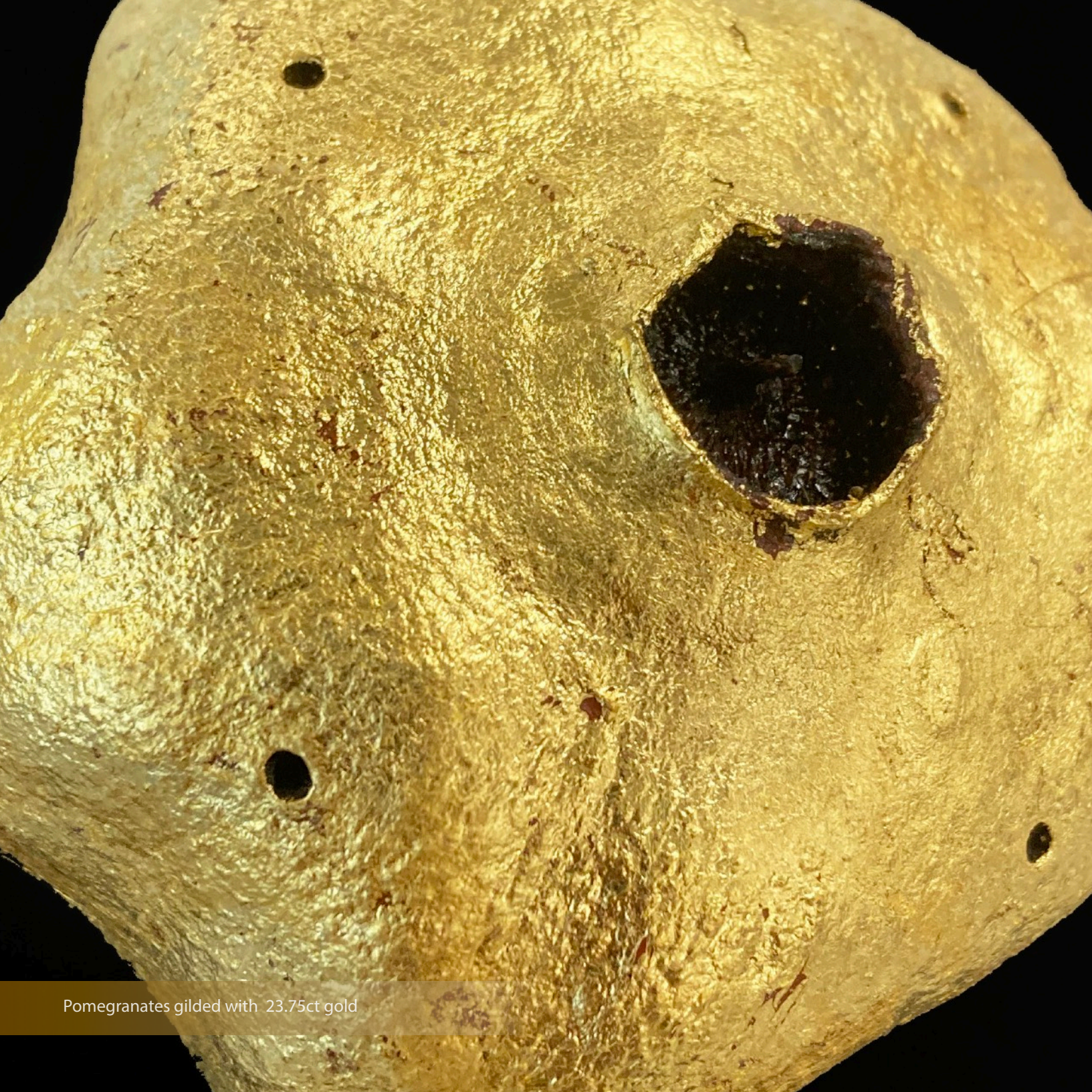
Made using the leaves growing in CEB, added to water with iron sulphate.



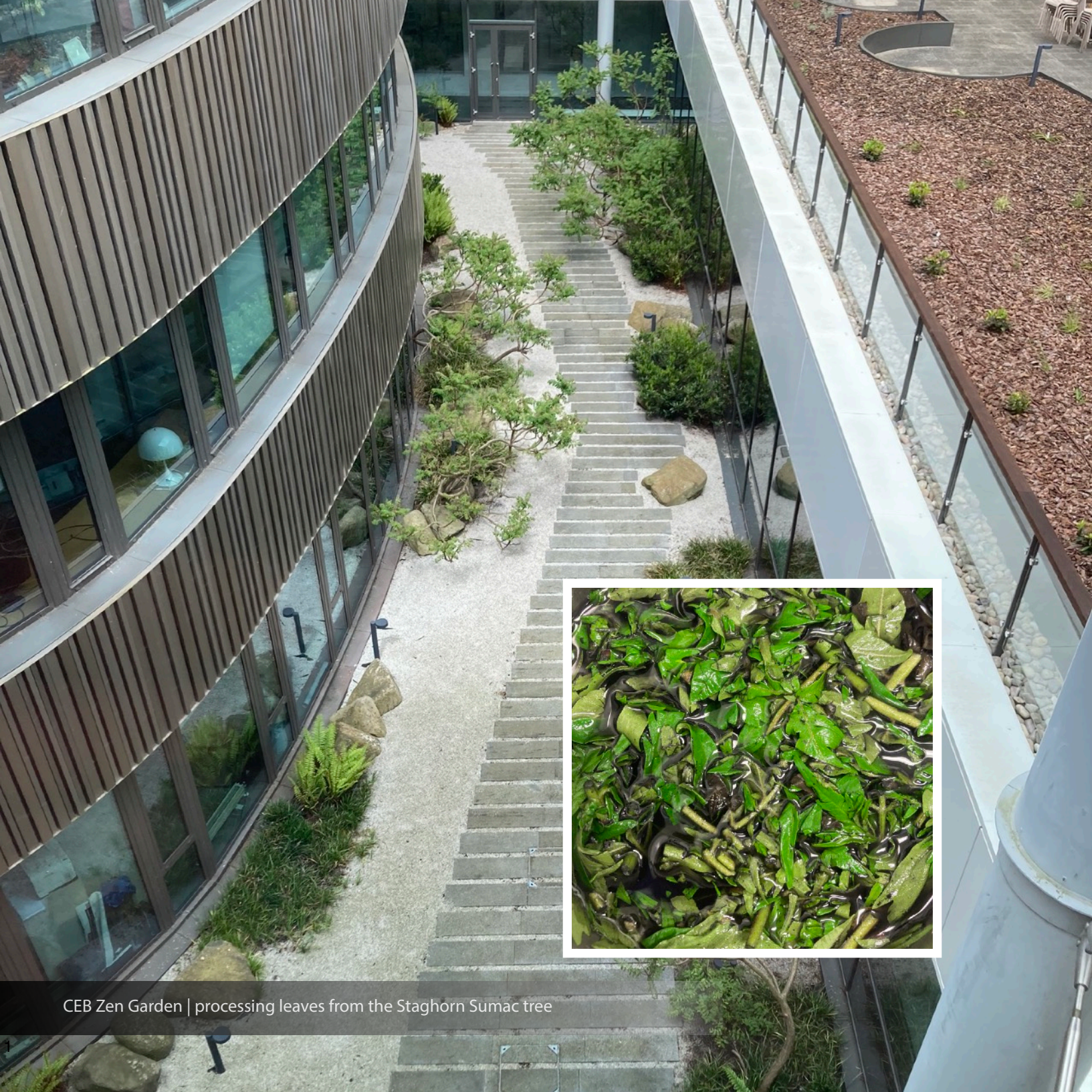
Pomegranate flowers collected from Cambridge University Botanic Garden to make a black dye



Pomegranates painted with pomegranate ink



Pomegranates gilded with 23.75ct gold



CEB Zen Garden | processing leaves from the Staghorn Sumac tree





Elephant Ears dried leaves (*Bergenia crassifolia*)



Artist exhibition commentary



Dyeing cotton fabric



Cotton dyed with unripe buckthorn berries



Artist exhibition commentary

Artist Residency from September 2024 to October 2025

Fruk Lab, Department of Chemical Engineering and Biotechnology, University of Cambridge.

This work was funded by BBSRC Prosperity Partnership Grant with Colorifix (BB/Y003225/1)

Surface Engineering and Pigment Tailoring for Sustainable Dyeing of Cellulosic Materials.

Some of the plants were collected from Cambridge University Botanic Garden.

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Image: Leather dyed with pomegranate



