

observing nature
– or an artistic journey into microscopic photography ...

by Barbara Jansen

This exhibition shows glimpses of the two years Postdoc Project *Inspired by nature, temporal and structural patterns in Textiles*. The project has been funded via Vetenskapsrådet (The Swedish Research Council, reference number: 2016-00181) and has been conducted as an International Postdoc at Gothenburg University, Academy of Music and Drama, as well as at Aalto University, Department of Design.

Aiming to explore rhythms found in nature and how they can be translated into new forms of textile design expressions. Posing the question: How could the ever changing sunlight, the movement of water and wind, the growth principles of plants and trees be studied, documented and their essence extracted into new forms of design expressions?

The context is new sustainable design approaches, which build on the strategy to base future design on form, shape, imagery, growth principles, and organizing principles of nature in order to reach long-time sustainability.

To observe, study and document dynamic processes in nature (like the growth principles of plants) and extract their essence into new forms of design expression. Moreover, to exemplify them through the development of three-dimensional textile structures.

What started out as an artistic investigation in design research turned into an aesthetic exploration of microscopic photography and its 3-dimensionl metamorphose in Fine Art.

I am extremely grateful for this unexpected, challenging, surprising and inspirational Journey. I owe my dept of gratitude to Vetenskapsrådet for funding support, Anders Carlsson and Per Anders Nilsson accepting my research proposal on behalf of Academy of Music and Drama, Kirsi Niinimäki and Pirjo Kääriäinen for excepting me as a Visiting Postdoc researcher at Aalto University.

Special thanks to Tomi Pelkonen for a fantastic collaboration and introducing me into the world of ceramics, Ceramic Workshop, Aalto University.

Special thanks to Jinze Dou, Marika Hellman, Nina Riutta for introducing me to diverse microscopes in the Biofilia and Chemarts Laboratories, Aalto University.

Special thanks to Osse Federley, Manuel Fonseca, Ashish Mohite, Francesc Segura Gonzalez for 3D printing support, Aalto University.

Exhibition held at *Sirenfestivalen*, 19th January 2019, *Galleri Fyra små Rum* in Kvarnbyn/Mölndal, Sweden. Collaboration with *Textile Concert* at *Katakomberna* in Kvarnbyn/Mölndal, Sweden.

nature inspiring music ...

When I presented my work at the Academy of Music and Drama about a year ago, I brought with me a selection of microscopic images out of an over thousand images big created collection. Whilst spending, hours and hours, days after days and days turning into weeks and months on a microscope trying to find an understanding of the inside construction of plants, ... there appeared something, which arose the memory about scores, music scores. I had never seen such scores before in my life and at the same time were was something familiar and mystical. I could not hear their music yet, but it was clearly vibrating inside them ... so here it goes, an artist asking a group of musicians and composers "*can you hear music in these?*" "*I hear it whisper but cannot grasp it*". **Yes, it's here, this could be read as that ... and that ...** ... half a year later I was invited to kick-off the composing class with lectures on my work... today now, you – our audience can start to listen and see the wonders of nature ... Enjoy.

Epilogue: it is the total unexpected things which happened on this journey, it was beyond my imagination, that forgotten several decades old plant samples inside a chemistry lab, would end up in the hands of an artist, discovering a new tool – the microscope and continue travelling to inspire other form of arts, music. And hopefully you.

Music performed:

Raphael Mak: *RGB*

Oscar Calatayud Gomez: *Crystallized*

Vidar Davidsson: *Död men Drömmande*

Noak Esbjörnsson: *Title TBA*

Merve Erez: *Come out into the open*

Gustaf Ekman: *Ett och annat, kan vi väl förlora*

Ensemble:

Electric guitar - Lauri Kallio

Electric guitar - Oliver Segell

Hammond - Simon Jonsson

Doublebass - Erik Bengtsson

Doublebass - Viktor Lundin

Saxophone - August Eriksson

Saxophone - Thomas Jäderlund

Voice - Tora Kjellmer

Voice - Channa Riedel

Drums - Ossian Ward

Galleri Fyra små Rum - Gallery Four small Rooms ...



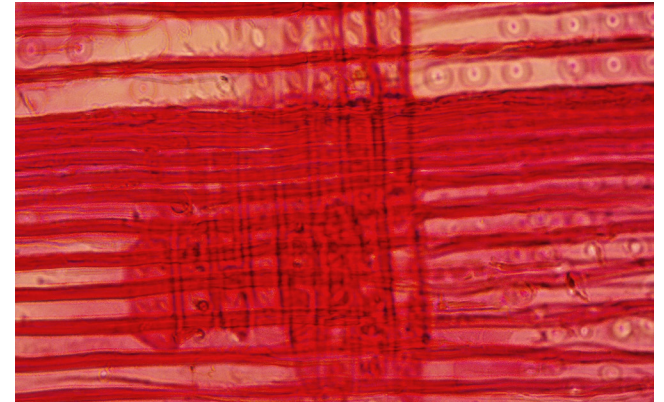
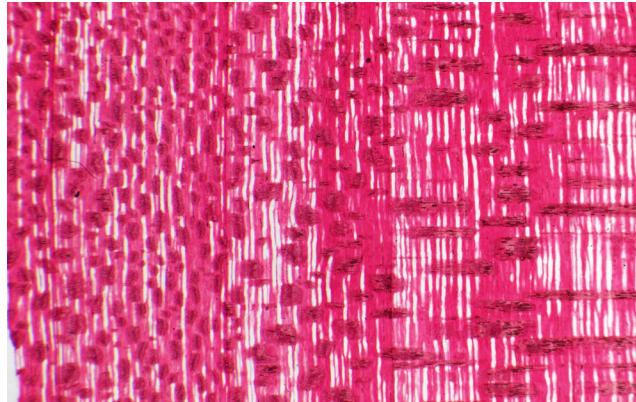
nature inspiring music ...



A Tree Sample collection found at the Chemarts laboratory, Aalto University, used to show students the inside cell construction of trees. Each glass slide contains three samples of the same tree, each of them just a few millimetres big, been cut in three different directions of the tree trunk: cross section, radial section and tangential section.

Ten trees have been examined and provided to the composing class:
Hardwood trees (carrying leaves) and Softwood trees (carrying needles):
apple tree, ash, aspen, birch, linden, oak, and juniper, larch, pine, spruce.

Images show the radial section in different magnification scales: 2x, 8x, 10x, 40x.



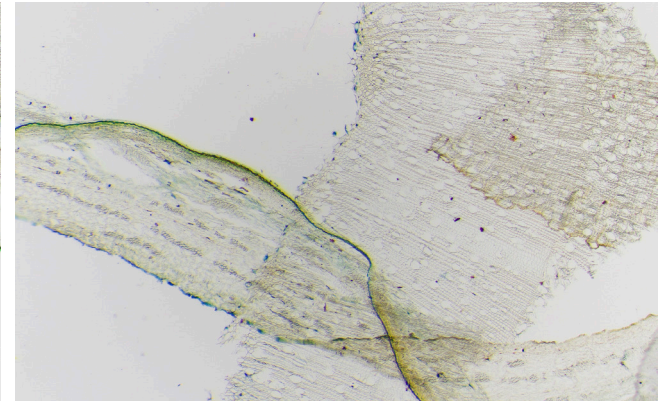
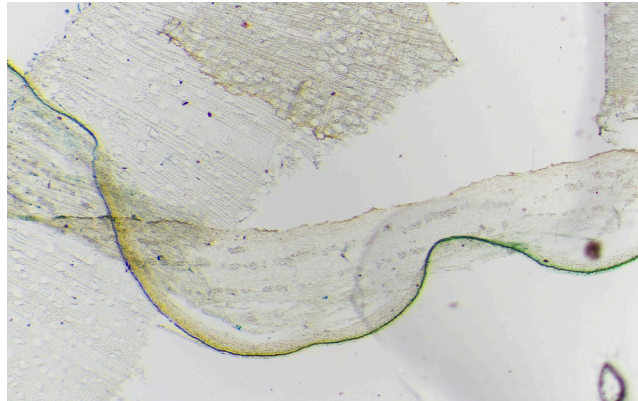
in the process ...



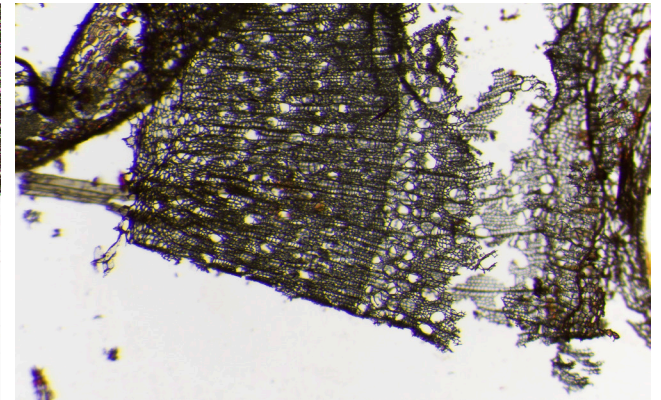
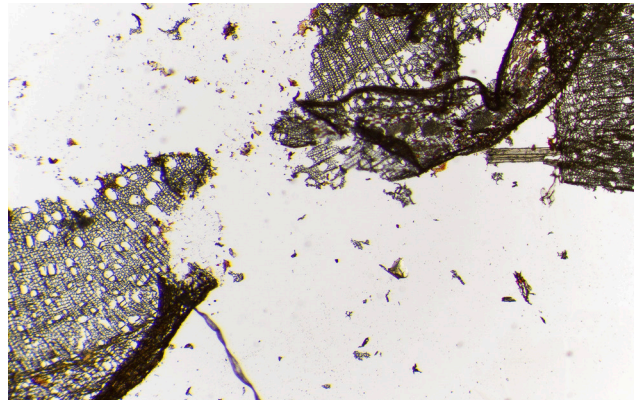
Process of preparing plants for microscopic observations contains:
cutting, dehydrating, embedding, fine cutting, dying, mounting on glass slides.

Plant Samples: Willow
(cross and tangential section, dyes: safranin, tolvedine blue, lugols iodine)

Microscopic Photography: Willow
(totally fractured and re-coloured through permanent conservation process)



searching the sharpness



Most of the time at the microscope you spend with trying to find something at all, in the mist of nothingness, fogginess, blurriness, is there something at all?

You search in order to find the object at all, ... you search to find sharpness in order to be able to see what can be seen.

So I am hunting the sharpness, hours after hours, days after days and days turning into weeks and months...

One day someone asked me *why sharp images?* Sharpness is boring.

Is it? But I am trying to see, to understand, how can I do that, if I cannot see it?

Hm, but if hunting the *perfect images*, meaning being sharp, is not relevant any more. What is relevant then?

exploring microscopic photography in 3D



The plant sample sections, which I have studied with the microscope are 3-dimensional, even they are extremely fine (8-15 μ m). So I am trying to reach an understanding about the 3-dimensional cell construction of plants in connection to how those generate the overall form of the plant. Taking images at the microscope turns a 3-dimensional object, into a 2-dimensional image.

I am aiming to develop new forms of 3-dimensional textiles based on plant construction. So how to turn a 2-dimensional image back into 3D?

This is an observation and form study from 2D to 3D.

Firstly explored through 3D printing and secondly in ceramics. Thereby 3D printing has been used as a tool to create moulds to slip cast ceramic.

Is 3D printing still a textile?



exploring microscopic photography in 3D



... the end.