



MATERIALS INNOVATION

The new materiologists: materials innovation

PHILIPPA WAGNER, WGSN 24.08.10

The WGSN Materials team tracks the "new materiologists" - the breed of designers changing the way we define furniture, fashion and architecture through material choice. With a focus on biotechnology and sustainability, it is to science and nature rather than fashion they are turning for new ideas.

This group are blazing new trails by reinventing the basic building blocks of design. They are pushing the boundaries of what is perceived as material and borrowing methods from the kitchen, lab and nature itself.

For these "materiologists" the process is as important as the final product; their recipes and materials constitute an entirely new type of product and aesthetic.

Synthetic stone



Synthetic stone samples by Damian Palin



Bacteria growth by Damian Palin

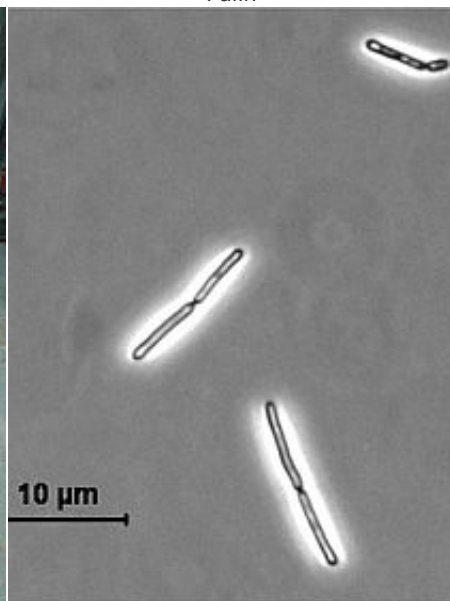


Stool mould and materials by Damian Palin



Stool being removed from its mould by Damian Palin

Synthetic sandstone stool by Damian Palin



Sporosarcina pasteurii bacteria by Damian Palin

Damian Palin, a recent graduate from the Royal College of Art, is using bacteria to create a new type of synthetic sandstone for building and manufacture. His work explores how a departure from current production methods can result in new materials through the study and use of biological processes.

Working at temperatures that are considerably lower than current industrial methods, Palin uses *Sporosarcina pasteurii* bacteria as a binding agent to cement natural granular materials and create moulded artefacts.

Palin's greatest difficulty is producing the right conditions for the bacteria to live homogeneously within a mould during casting, resulting in discrepancies between cast and form. The result is an uneven, organic aesthetic and an object that is more sustainable and thought-provoking than one created using standard methods of fabrication.

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Living surfaces



Algaerium species samples by Marin Sawa



Encapsulation of algae by Marin Sawa



Molecular cooking lab by Marin Sawa



Encapsulation of algae by Marin Sawa



Preparing medium for algal growth by Marin Sawa

Also working with bacteria is materiologist Marin Sawa who creates and designs living surfaces and textiles using "algaerium", or as she describes it: "textile-inspired design for cultivating and producing green energy".

In her home biology lab, Sawa uses skills borrowed from molecular gastronomy to create her own species of algae. She is one of many designers who believes in the benefits of organic materials that can be grown or fabricated at home.

Through her work, Sawa has crafted living organisms into new forms and created new hybrids, resulting in materials that are completely unique, right down to their genetic structure.

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Bio-lace





Bio-lace experiments by Emily Crane

Also growing materials at home and borrowing from molecular gastronomy is Emily Crane, a fashion designer who experiments with growing and freezing bubbles and foodstuffs to create new materials for clothing and accessories.

Her process involves capturing bubbles in organic fluids such as pork gelatine, agar-agar, glycerine and food colouring and freezing them into shapes of her choosing. In this way, Crane creates a series of delicate bio-lace structures that are later finished using a variety of lustres.

Posing questions about the future of fast fashion, her work also touches on issues of sustainability in a manner similar to Suzanne Lee and her Bio-Couture research.

emilymarinacrane.blogspot.com

Growing furniture



The manufacturing device by I Wen Lee



A finished growing stool by I Wen Lee



Growing furniture by I Wen Lee



Material samples by I Wen Lee

I Wen Lee, a recent graduate from Central Saint Martins, London, painstakingly grows her materials by building them up in layers, mimicking the growth of stalacmites.

After pouring composite fluids such as clear resin or glass fibre into funnels, Lee allows these substances to drip gradually onto a prepared surface until, over time, the chosen material accumulates into the form she desires.

Lee demonstrates her method in a video that can be seen [here](#).

www.iwenlee.com

Community commerce



Community Commerce by Kieren Jones



Ground chicken bones by Kieren Jones



Tanned chicken skin by Kieren Jones



Jacket made with chicken leather and wadded with chicken feathers by Kieren Jones



Stages of bone processing by Kieren Jones



Egg cup made from chicken bones by Kieren Jones

Kieren Jones takes the concepts of recycling and sustainability to the next level. Using discarded chicken skin and bones, he creates garments and products such as spoons and egg cups in his homemade factory.

With the aim of using all the parts of a chicken, Jones incinerates the bones in his garden, grinds up the ash and reconstitutes them into homewares like egg cups. He also tans chicken skins to be used as cheap leather for garments.

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WGSN Key Themes

- Process dictates form. As highlighted in our [Pliable](#) trend for spring/summer 2011, materials are pushing the boundaries of form and function as well as creating new aesthetics
- Designers are hungry for new materials and see advances in technology and science as a ripe area for experimentation
- Sustainability is a key driver for these new materiologists
- Living organisms like bacteria are an important new material

Related report

Materials innovation: bacteria - invisible, influential, inspirational

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