AIC: Colour Perception

The interaction of colour and light plays a crucial role in the power of perception, and for centuries has invited both scientific and artistic experimentation.
Stylus investigates the work of academics and artists who use light to explore colour phenomena, encouraging audiences to engage with concepts beyond the realm of commercial application.

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Colour-Light Centre

The venue at the Zurich University of the Arts was a fitting location for the AIC symposium, as it is the home of the **Colour Light Centre** (CLC). CLC is a world-leading centre for colour research, publishing illustrated guides and working with designers on the application of colour.

Theorist Johannes Itten was director of the faculty between 1938 and 1954, instilling his fascination with colour perception into the work of the institute. During his directorship, Itten also demonstrated the potential implications for such research in the art and design worlds.

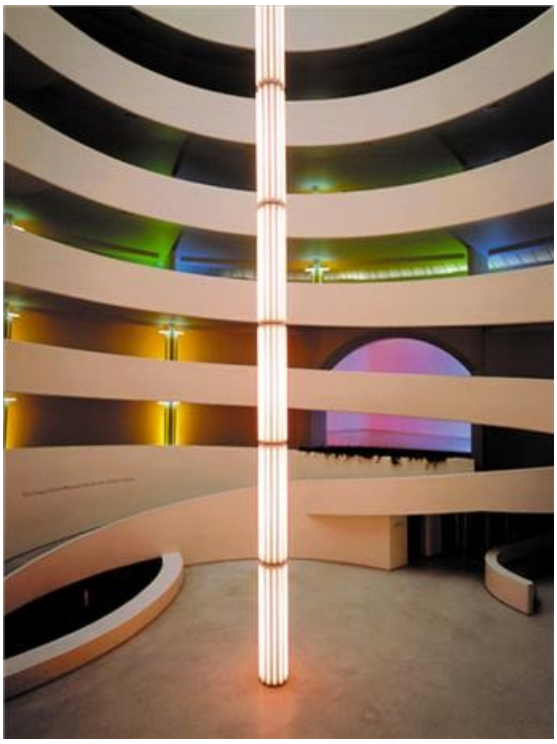
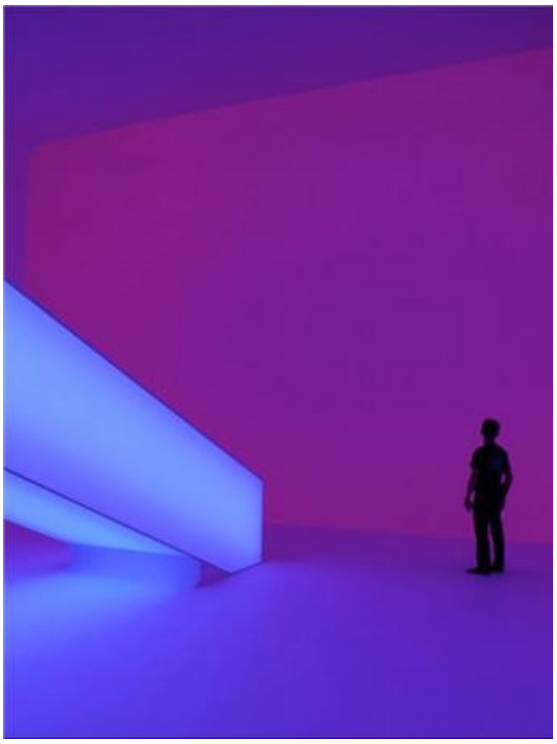
The CLC research team, consisting of Ulrich Bachmann, Ralf Michel, Florian Bachmann and Marcus Pericin, discussed colour perception experiments, engineered to educate and stimulate design students. Projects including the Pigment Carpet, the Colour-Light Keyboard and the Colour-Light Cabin, explore the colour theories of additive and subtractive colour, the effects of surface quality, colour shadows, afterimages and simultaneous effects.

Building full-scale interactive models, faculty staff and students engineer engaging and immersive environments in which to experience enthralling colour phenomena. Publications serve as a compendium of experiments, with clear descriptions of the methodology and visual results.

Immersive Art

Human perception of space and form through colour and light has inspired contemporary artists, who build breathtaking installations and environments to further knowledge of colour phenomena. Moving beyond traditional pigment–based mediums, artists including James Turrell, Dan Flavin, Robert Irwin, Erwin Redl and Sanford Wurmfeld are unified by their exposure of audiences to the physical, psychological and physiological effects of colour.

French artist Charlotte Beaufort, London-based Pierre Auboiron and Sanford Wurmfeld presented works that enabled delegates at the event to witness the effects of temporary installations, many of which are no longer on display to the public. Each presentation served to demonstrate the power of colour and light to disorientate, excite and inform the awareness of space and form.



Stylus Summary

Coloured light can be used to create the sensation of colour in a space. The Zurich University of the Arts, home of the Colour Light Centre (CLC) is a world-leading centre for colour research, publishing illustrated guides and working with designers on the application of colour. Full-scale interactive models, faculty staff and students engineer engaging and immersive environments that further our knowledge of human colour perception.

James Turrell, Dan Flavin, Robert Irwin, Erwin Redl and Sanford Wurmfeld all work with coloured light in fine art, creating immersive works that envelop the visitor in colour.

AIC: COLOUR PERCEPTION
GALLERY / 11 IMAGES

AIC: Materials & Surface Finishes

The perception of colour is defined by the characteristics of reflected light from a material or surface. This concept has lead designers and academics to study the effects of varied light temperatures and colours on surface quality.
Stylus investigates the theories behind the work of academic researchers in the fields of colour and light, also taking a look at inventive and experimental approaches to surface colour.

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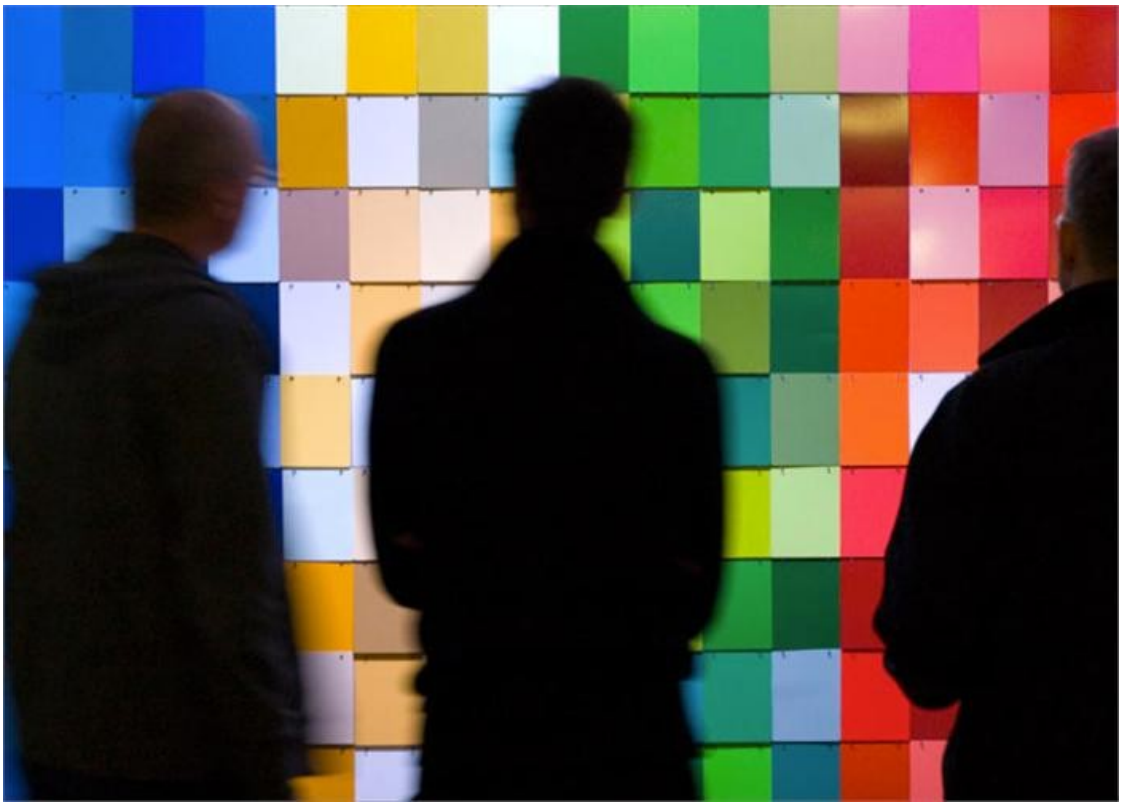
Reflective Surfaces

The perception of an object largely depends on three fundamental aspects, or modes of appearance – how the material is lit, how the surface of the object reflects light and the 3D form of the object. Combined modes of appearance are translated by the human brain, enabling individual perceptions of the object.

The perception of a material and surface finish requires further information from the object. Aspects of appearance define a more sophisticated view, through the characteristics of colour, texture, translucency and gloss. Lighting is central to the ability to perceive material appearance.

Dutch lighting designer Marcus Reisinger observes: “Human perception of a material’s characteristic may vary dependent on the illumination. Among the aspects that can suffer severely from the impact of lighting is colour”.

At the **Colour Light Centre** in Zurich, students and academics constructed an installation *Colour-Light Pattern*, composed of 272 powder coated metal plates with different shiny and textured surfaces. The plates were arranged in four colour fields – blue, yellow, green and red – with each field presenting ranges of saturation and brightness. The experiment demonstrated the effect of coloured light, causing hue shifts, changes in brightness and saturation, along with greying.



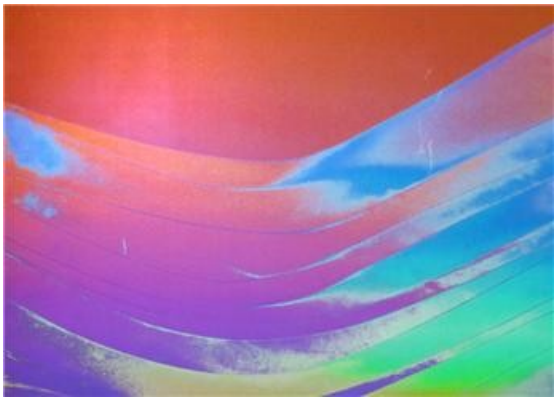
Interference Colour

MariaPia Pedeferri of the Politecnico Milano in Italy presented the research work of Italian chemical engineer Pietro Pedeferri (1938-2008). He worked in the field of electrochemistry and corrosion for nearly 40 years, experimenting with surface colouration of titanium. Using the electrochemical technique of anodising, Pedeferri developed a range of artistic compositions in saturated colours, that he called Titanium Art.

Explaining his fascination, he was quoted: “Thin films on the surface [of titanium] interfere with light and create colours equally as fascinating as those of flowers, crystals, animals or natural spectacles such as the rainbow, the sunrise and the sunset.”

At the event, MariaPia Pedeferri explained the process. By forming a layer of oxide on the surface of the material, coloured wavelengths are visible. Ranging oxide thicknesses result in ranging coloured wavelengths, enabling the artist to create vibrant designs in mixed hues through varied depths of apparent ‘brushstrokes’.






Stylus Summary

Experimentation with the reflective qualities of a material's surface has caused colourists to revisit the fundamental aspects of hue that depend on how the material is lit, how the surface of the object reflects light and the 3D form of the object that the colour is applied to.

Interference of light caused by altering the surface of a material produces a diverse selection of colours. Italian chemical engineer Pietro Pedeferri (1938-2008) compiled research on the possibilities of tarnish and interference using titanium, which is still influencing how designers use this technique today.

AIC: MATERIALS & SURFACE FINISHES
GALLERY / 6 IMAGES