

## Practitioner's Statement

### ***Redox Reaction***

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Art and science in many ways are mostly viewed as separate entities, even though they share many similarities. Art is creative, spontaneous, expressive, sensual, experiential and emotional. In contrast science is methodical, logical, explicative, intellectual and cognitive. My body of work is based on the relationship between art and science and the interconnectivity of the two disciplines which, when combined, enable us see new ways of experiencing and interpreting life. Art and science have always been two very strong passions of mine and I am constantly taking in new knowledge from both areas of human endeavour.

My idea development evolved throughout my folio as I began to distinguish the best way to represent my love for art and science as one. I researched deeper into the explorations of my favourite artists Jonathan Zawada, Leif Podjahsky and Kelsey Brookes. Initially, I was captivated by Zawada and Podjahsky's Photoshop creations of intricate designs and psychedelic forms. Psychedelic art related to my initial concept, however after my folio developed, I researched deeper into Kelsey Brookes and his neurobiological and psychedelic art influences, finding his work related to my final piece to a greater extent.

Kelsey Brookes was a major influence for my final visualisation of the cells. I was instantly intrigued by his visual masterpieces of intricate designs and patterns, portraying molecular structures, and the effects of psychedelic drugs on the human body and brain. Brookes creates his masterpieces using a methodical painting process similar to that of being high or in a trance state. He uses repeated lines, often from one brush stroke, which are executed to form neurological structures. The strong colours he uses signify the intensity of his hallucinogenic state, which allows magnified experiences of what really happens to the brain during drug inducement. Cell biology is one of the most visual branches of science and looking at living matter under microscopes and discovering their intricate forms captivated me, and I wanted to recreate this moment for the viewer.

Originally, I experimented with watercolour, gouache, oil pastels and pastels pencils and Photoshop, but decided on the unusual medium and technique of nail polish and marbling to create a burst of intense colour on clear Perspex. The Perspex replicated the translucence of the cell and the qualities of a microscopic slide.

My final practical displays a free hanging cell cluster, which when combined create spectacular organic shapes. The larger blue 'organic shapes' represents the cytoplasm of the cells, with the speckles of colour demonstrating the generation of life within a cell, and the movement of particles, which make up all the living matter. They also represent the other factors which contribute to cellular function i.e. ribosomes, mitochondrion and vacuoles. The much smaller orange shapes symbolize the nucleus, vital for the life of a cell. As a whole the two shapes are dependent on each other to survive and function as life. The contrast of orange and blue also depict their contrasting functions. I chose to create a cell cluster to signify the dependence of living things; much like humans, they need human interaction with their environment to survive. The circular light shining through the piece signifies the light from a microscope, an imperative apparatus for viewing the life forces.

My interest of art and science continued into my second practical where I chose the genre of installation art as a starting point. I documented the beautiful, complex scientific growth of metal, in a metal ion solution. Inspired by artist Maria Penil and other artists featured in the annual Agar Art Challenge. I came across a new canvas; agar plates. Penil's work combines a relationship with biology through shape, texture and nature, exploring the never ending cycle of life. Her work is an exploration of evolution in nature and organic shapes. Using agar in petri dishes as her canvas, Maria works in a scientific format, where she paints with microbes that are collected, spread around, painted and grown, to create original organic forms that mirror life cycles in nature. This idea really engaged my love of experimentation with 'science' as the actual medium itself.

My initial experiments using agar began with experimenting with different mediums, such as paint and ink. The ink was very translucent on the agar and I easily manipulated it to create intricate designs, much like the growth of organisms, but it wasn't the same as exploring an actual living thing. Whilst my experimentations took place I discovered that I really wanted to learn, and watch, how organisms actually grow, rather than just recreate them based on images. This led me to the idea of growing metals in agar plates. Metals are free of toxins and therefore safe to grow in a controlled environment.

My practical shows the wonders of chemical reactions represented in 400 spectacular visual of growth patterns. I chose to create a redox reaction where zinc metal reacts with a silver nitrate solution in agar, resulting in beautiful cell like forms that array in technicolour fluorescence. Redox reactions are referred to as electron-transfer reactions, where oxidation occurs when a species loses electrons and increases in oxidation number. Reduction is when a species gains and decreases in oxidation number. In any reaction in which oxidation occurs, reduction must also occur. Zinc metal loses two electrons to form the zinc(II) ions, while the two silver ions each gain one electron to form two silver metal atoms. In this case the silver replaces the zinc metal and moulded into crystal like formations, which I then photographed at every stage of development. I took 800 photographs to document this process over several weeks. The plates turned orange due to a reaction of silver nitrate in the agar, so I chose to edit the images in Photoshop changing the hues and saturation of the images for my final installation piece idea. The result of this was a psychedelic rainbow when the images were placed side by side.

Finally, I joined together 200 petri dishes to create my final large scale hanging installation. When joined together they created an intense optical illusion with a slight perpetual motion effect. The hanging of the installation fundamentally enables the viewer to walk around the piece and immerse themselves in a 3 dimensional scientific experience, leaving the viewer to ponder the wonders of chemical reactivity and how nature can provide us with such wonderful natural art forms.