

How Can We Understand the Relationship Between Artists and Their Materials in the Production of Art Glass Through Modern Technology?

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Abstract

This essay explores the relationship between the artist and their materials in the production of glass art through modern technology, and the role of glass as a medium in art rather than as a form of craft. It includes a brief history of glass as an artistic medium, the development of glass techniques and their application in the field of art. It reflects on the uniqueness of glass as a sculptural medium because of its optical properties and transparency. The rise of the American Studio Glass movement, a landmark in the history of glass art at the time, changed the tradition of using glass, and many artists began to use it to express their own artistic ideas and aesthetic views, enriching the language of glass art and making it an independent material for artistic expression. With the development of glass as a fine art media and the removal of technical limits on its use, we are seeing an increasing number of artists take use of the aesthetic and conceptual possibilities it provides. The essay uses case studies to show some artists started from materials and made some new attempts to combine works with new media.

Keywords: glass art, fine art, sculptural, new media, arts medium

1. Introduction

Glass is an ancient and magical synthetic material, has a long history and tradition of craftsmanship. For a long time, glass products have been closely integrated with everyday life. From the mid-20th century to the present day, it has become an integral part of contemporary art and contemporary craft. Contemporary art constantly pushes the boundaries of art in terms of media, materials and methods of perception, with the possibility of challenging preconceived and subversive ideas. The question discussed in the essay is 'How can we understand the relationship between artists and their materials in the production of art glass through modern technology?' This question is based on the research of my previous works. In my opinion this essay sheds a light on how contemporary art could be developed by glass art. In doing so, I intend to explore the relationship between people, technology and space. The first aspect is about the relationship between material and artists. As an artist, concept is the biggest trigger point of my creation, and the material language is a powerful weapon for my expression. I claim that materials, as an artistic language, should not be isolated from artists themselves, but have a certain relationship with artists. One of the most basic and most applicable aspects of art is the necessity of materials. Materials used by the masters of art in their art production may have a negative impact on their methods and work content. The artists make use of materials and medium such as wood, paper, paint, pollen, wax, plaster, stone, glass, metal, plastics, photos, videos, and computers. Each raw material produces some special items in the creative process and the final work, and this is what I will be exploring in this assignment. In a time of ever-expanding artistic creation techniques, the presentation of glass artwork is undergoing enormous changes. Traditional materials such as glass are being used to create art forms that change the senses in different

ways.

What is art glass? Glass Art is the general term for arts and crafts and the art that use mainly glass materials. In Japan, it sometimes refers to glass modelling art. The term “Glass Art” signifies a wide range of creative expressions and creations, including everyday objects, antiques, sculptures and handicrafts, as well as contemporary art. “Glass Art” can be categorized according to the method of production, materials, age, region and material. Its history can be traced back as far as B.C. Many artists throughout the world attempted to modify glass to broaden its use in architecture and art in the first half of the 20th century, often in collaboration with technicians. Due to its rich expressive power, glass materials do not only have a place in arts and crafts but are also widely used today in the creation of sculpture, installation art, contemporary art and other art forms. Through the integration of digital technology, artificial intelligence, the Internet and artistic creativity, interdisciplinary and inter-professionalism have enhanced the creative power of art and enriched its creative approaches. The addition of new media will provide new inspiration for the development and creation of this traditional art. The materials, languages and craftsmanship of glass will also provide new media and means for artistic creation, which will nourish each other, and the future is promising. What distinguishes glass from other common substances is that it is expressive in its own right and that its language is as pliable as its qualities, which makes it a very creative medium. This essay analyses the uniqueness of glass in art and investigates the article analyses and investigates the singularity of glass as a medium for artistic creativity. In the new century, glass art has developed into a multi-form and multi-material combination, and has experimental direction, since glass artworks have been presenting abundant formal languages and visual aesthetics.

2. Glass as Material

As a highly malleable material that is both fluid and malleable, glass has always been explored in the art world. From an artistic point of view, the transparency, reflectivity and high light transmission of glass are its most interesting properties, as they produce interesting optical effects and enrich the visual possibilities. Glass can be made in a variety of shapes and can be applied in any color and has its own unique visual aesthetics of glass. Whether it is a sculpture, an installation or an art piece, glass is an excellent medium. The high frequency of glass application in everyday objects has made glass objects appear to most people as ordinary vessels or artifacts rather than works of art. With the development of glass craftsmanship, it has become possible to produce glass in a wide variety of forms. Glass, on the other hand, was employed as a craft material until the early 20th century. This was probably definitely owing to technological restrictions, expense, and artists’ limited access to glass studios. Scientific advances and the industrial revolution have resulted in the creation of new techniques and materials, as well as lower manufacturing costs, which have simplified the work of artists. With its crystal-clear material and extreme plasticity, glass carries the artistry of creation and the serendipity of the unknown. Blown, cast, pressed, sintered, fused, high-temperature colored glazes, stacked firing, hot bending, hot fusing, the rich techniques of thermal treatment of art glass offer endless possibilities of creativity. Artists have begun to experiment with glass materials to express their artistic ideas and aesthetic views, and the new artistic language of sculpture. The expressive and artistic nature of the glass material itself has invariably widened the boundaries of the realm of sculpture. The glass material itself is full of contradictions: it is hard and fragile; it is soft and fragile; it can be rough in texture or exquisitely smooth. Within the visual arts, whether it is a traditional object or a contemporary installation, the words that come directly to mind when glass is mentioned are ‘translucent’ and ‘transparent’. In terms of core materials, unlike other visual art disciplines where the raw material is touchable, such as ‘clay’, ‘copper’ and ‘wood’, the core of glass is silica. The materials and processes of glass often have unexpected characteristics and always seem to be somewhere between ‘yes and no’, full of contradictory fascination. Glass is a spatial material that is not only suitable for living, but also for creating art, as it is able to reflect light from different angles, allowing one to see a piece of beauty.

Throughout the history of glass art, in the early days glass was a material that existed primarily in the form of vessels, glassware, jewellery in the early days. The development of decorative art glass led to the widespread use of glass as a material. With the advancement and development of technology, glass was used as a material for artistic expression in the 1950s. In 1962, the American artists Harvey K. Littleton and Dominick Labino began to explore the possibilities of glass as an artistic medium. Later, with the success of furnace firing, it became possible to separate glass creation from industrial manufacture. In the 1960s when the American Studio Glass movement claimed to solve the technical problems arising from the use of glass in art and design glass was used as an important material for art and design. Artists used the glass material to create works that incorporated their own emotions into in their work, allowing the symbolic language of glass artworks to develop fully. In the Studio Glass movement, glass art does not only remain a practical function, its creativity, aesthetics and artistry also came to the fore, with some art designers creating. Some artists created amazing works of art in glass. The rise of the studio glass movement, a landmark in the history of glass art at the time, changed the tradition of using glass, and many artists began to use it to express their own artistic ideas and aesthetic views, enriching the language of glass art and making it an independent material for artistic expression. With the improvement of

people's aesthetic taste over time, the demand for glass art in life has gradually increased and glass art design, with unprecedented depth and breadth, has penetrated people's lives.

In the process of professional learning, I have been exposed to a wide range of materials, and have been constantly improving my hands-on ability and creativity. Glass is used as material for me to study and create at the graduate level. I aim to explore materials and technology, by extending the connotation of the two kinds of materials from the perspective of conceptual art, which triggers me to look for my own material language and ideas. Jessamy Kelly claims that 'Glass is a raw material that we encounter in various forms in our daily lives; however, as an artistic medium, it is evocative and has an innate beauty that has captured the creative imagination. Art glass is well suited to the pursuit of creative expression, transforming from a liquid to a solid state in front of our eyes. (Kelly Jessamy, 2020) The unique charm of glass attracts artists to explore it constantly. Another article written by Goshka Bialek suggests that the uniqueness of glass as a material can be of great interest to artists and expands the possibilities for the use of glass in the fine arts, provided that artists can have easier access to working with the material and that the potential of glass as a medium is adequately promoted. Development in this direction has been noticeable in recent years. (Goshka Bialek, 2022) When glass increasingly becomes a fine art medium and the removal of technical limits on its use (albeit size remains a permanent constraint) is enhanced, we have been witnessing an increasing number of artists take use of the aesthetic and conceptual possibilities it provides. Artists' understanding of glass as a strong medium of expression will continue to play an important role in bridging the gap between modern glass and contemporary art, establishing glass's status as a fine art material. Over the years I have been exploring materials in my sculpture works, and glass has gradually become the material that interests me the most. It is transparent, fragile and hard, and full of endless possibilities and creativity. I therefore hope that in my postgraduate studies, I would gain a deeper understanding and explore more possibilities with glass.

3. Glass Sculpture

Contemporary glass art is liberated from the limitations of conventional craft forms and is completely employed as a new form of aesthetic expression in contemporary art, most notably in glass sculpture. For artists themselves, the glass is a living material, a medium for the expression of artistic concepts, and its transparency and fluidity are employed to produce a vividly colorful and optically dreamy impression. More and more artists are experimenting with glass as a medium to create their sculptures, due in large part to the optical properties and transparency of the material. The unique texture given by the material itself makes it essential for the artist to think about light, color, volume and space when creating the artwork.

The space of a sculpture consists of two aspects: the real space of the sculpture and its imagined space. The real space of a sculpture is the space that the piece actually occupies. The imaginary space consists of the space and holes formed by the real form of the sculpture that are enclosed and partitioned within the space specified by the sculpture. In certain sculptures, the utilization of fictional space adds a sense of individuality. *Mother and Child* by Henry Moore, for instance, cleverly reveals the space already filled by the sculpture by its numerous concave surfaces, which cast shadows that provide the appearance of a space beyond its actual limits. Moore's sculptures are frequently referred to as "the art of the hole," and he demonstrates significant attention for imaginary space, hence emphasizing its significance in his work. Glass sculpture not only sculpts imaginary and actual space, but also creates a space that is unique to glass sculpture due to its material qualities. Thanks to the material's inherent transparency, glass sculptures can be perceived as overlapping and interlaced areas, exhibiting a distinct feeling of space before and after the work of art.

The use of glass as a medium for sculpture began after the World War II. Stanislav Libenský and Jaroslava Brychtová developed their groundbreaking ideas for cast glass in Czechoslovakia, while Harvey Littleton was working toward the birth of the Studio Glass movement in the United States. These three artists had an enormous impact on the development of sculptural glass, as did Dale Chihuly, and all of them taught, encouraged, and promoted the exploration of abstract ideas-an important direction for glass. Blown glass was an essential component and the weapon of the Studio Glass movement in contemporary art. From the 1960s to the present, this movement has pushed glass art beyond its usual practicality and functionality under the slogan of "making glass the artist's medium." Major glass works produced by Dale Chihuly throughout the world revolutionized the knowledge and perception of glass art in the 1990s. Czech artist Stanislav Libensky was the first person to propose the interaction between the material of glass and light, and his work breaks new ground in glass art by allowing light to travel into the transparent interior, using the thickness of the glass and the light and shadows to produce new, free spaces of light and shadow in the glass (Figure 1). Glass is thus very disorienting, and the action of light enhances the visual expression of the material: Colour and light refracting in the glass which create both real and illusory volumes.

As Harvey Littleton, a pioneer of the American glass studio, says: "The contemporary artist's approach is one of constantly exploring and questioning past standards and current definitions, finding new ways of expression in

materials and in the creative process. One might even say that this process of exploration is a result in itself. Although the application of physical and chemical knowledge to glass can expand the possibilities in an artist's work, it does not produce art. Through endless creative exploration, the essence of glass is gradually discovered and conveys the richness of the artist's inner world." (Joan Falconer Byrd, 2011)



Figure 1. Stanislav Libenský and Jaroslava Brychtová, *Space*, 1993

Source:<<http://www.artnet.com/artists/stanislav-libensky%C3%BD-and-jaroslava-brychtov%C3%A1/space-ii-space-ii-PbXkf9p1PTArb2ddII9RJA2>> [accessed 25 February 2022]

Like Eric Franklin's embodied art installations, the skulls are made from flame-worked borosilicate glass tubes and a network of wood and electronics (Figure 2). The hollow tubes are also filled with a mixture of ionised neon, krypton and mercury to produce a visually striking glow that excites the viewer. Franklin uses laboratory-grade glass tubes to create full-size human skulls and bones, then fills them with neon, argon and other gases to make them glow from the inside. His anatomical research *Embodiment* is comprised of hollow glass, body-shaped sculptures filled with illuminating ionized krypton, which gives them a neon-like glow. Franklin believes his sculptures reflect both the incredible strength and fragility of the human body, a fact he is constantly aware of while climbing boulders and rock walls. Quoting A. Moret 'As an artistic medium, glass is an anomaly—at once sturdy and then vulnerable to the elements. Each glass piece has a metal wire sealed through the glass wall, usually in an inconspicuous location. Once a sculpture is filled with gas, the color will remain constant. There are subtle color changes that happen when you get close, or touch the surface of the glass, but they will return to their original state once you move away. In order to drastically change the color, the glass would have to be cracked open and refilled with another gas.' (A. Moret, 1993)

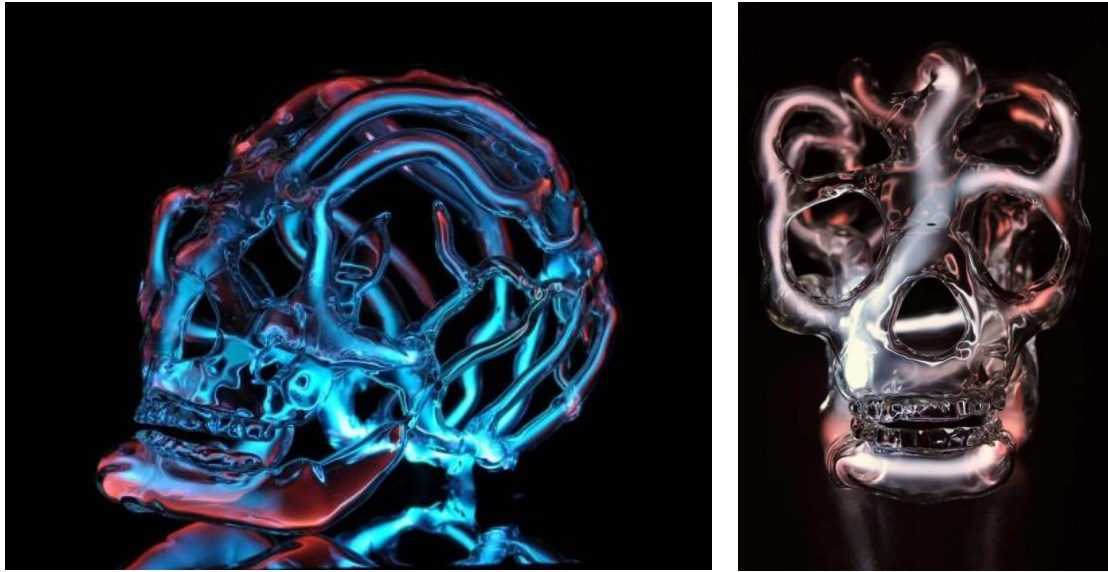


Figure 2. Eric Franklin, *Skull*, Borosilicate glass sculpture with ionized neon gas, 2015

Source: <<https://www.trendhunter.com/trends/eric-franklin>>[accessed 29 May 2022]



Figure 3. Eric Franklin, *Spiral* (flameworked borosilicate glass, argon, wood, 6" x 18" x 15", 2003, (Collection of AterWynne LLP, Portland, OR. Photo by Dan Kvitka)

Source: <<https://medinart.eu/works/erik-franklin/>> [accessed 29 May 2022]

The glass is therefore highly disorienting, and the action of light reinforces the visual expression of the glass material. While the color and refractory light within the glass create real and illusory volumes, the establishment of any work of art starts initially with the personal feelings of the artist. Whether it is a line or an implication, it is objectively conditioned by the ability of the public to feel and envision. Materials play a crucial role in the construction of a sculpture, and various materials evoke distinct emotions. Due to the immaturity of technology

in the past, glass materials are uncommon in contemporary sculpture. When people increasingly understand glass materials according to the improvement of science and technology, glass materials will become more prevalent in sculpture. It is essential for artists who deal with glass to recognize the feature of the material in sculpture, that the artist can bring glass to life at that point. Glass as a medium of sculpture will become increasingly prevalent. The usage of glass is essential to the creation of an artist's own style. This is the only way an artist can express his ideas and demonstrate the numerous creative qualities of glass.

4. Contemporary Art

4.1 Installation Art

The 1960s witnessed the rise of a variety of art styles and a surge in installation art. Many avant-garde installations were initially exhibited in "informal" spaces which were not museums or galleries. The majority of them did not want to be featured in art galleries or with collectors, but they did want a larger audience to view their thoughts and emotions. Consequently, in parks, squares, abandoned houses, and on the wall of a high-rise building, the first installations took the form of street exhibitions that were visible to the public everywhere. Over the past few decades, installation art has become a popular type of contemporary art, with theory and practice evolving and improving rapidly.

What is an installation, and how does it differ from sculpture? Installations usually consist of multiple objects and elements. They are site-specific, in other words they are made for a specific location. They are often ephemeral or semi-permanent, which means that they exist within a specific time frame. They are not meant to be valued or considered, but rather to be experienced. Installations of glass have two important characters: they are site-specific and experiential. But as in sculpture, installations can explore formal qualities. Installations about material are the most straightforward in terms of content. In the modern world, many different art forms have already appeared, developed and explored. Few other art forms are as impressive and fascinating as installation art. In my experience, when you walk into a room and the majority of the space around you is actually part of the artwork, you yourself become part of the artwork. The installation itself is a means for the artist to explore the unknown, integrating shock, creativity, and destructive power to impact human senses. It may engage you on multiple levels, activating your senses to experience art in a new way: touch, sound, smell as well as vision is explored to convey the artistry of installations. Some installation art is created using image symbols that the public can understand, so everyone can understand the meaning at a glance; some installation art is simply not appreciated by the audience, and you may even be exhausted and bored because of different perspectives between the viewer and the artist. These installations, spaces, and each work have deep meaning behind them, waiting for you to explore. In the latest technology, installation art is not lagging behind. Light, sound, video, immersive virtual reality and performance are just some media channels, and they are usually part of the artwork. As mentioned above, audience involvement and participation are an integral part of installation art, which should be an extension of people's lived experience. The environment created by installation art often has the power to encompass the viewer and to move them from passive viewing to active experience within an identified space. Such feelings require the viewer to use all their senses, including sight, hearing, touch, smell and even taste, in addition to active thought and physical intervention.

The elements of glass installation art: firstly, the 'object', in terms of glass art, is the material medium of the work itself or one of them, making it the content or one of the contents of this installation act. Furthermore, it is the "installer", that the installation is partly produced by human action and involves the dominant or interactive role of a subject, signifying that this "installer" can either be the artist himself creating a specific installation in a specific space for the viewer to experience and interpret. Installation to be experienced and interpreted by the viewer, but also by the viewer. The 'audience' or 'participant' then becomes the vehicle for the act of installation. The installation is, in effect, a tripartite collective action to complete a work. Installation Art in public spaces pay great attention to the integration with the surrounding environment, emphasizing the overall coordination of colour, structure and environment, as well as the human experience of the installation art style and connotation in the environment, while glass installation art happens to have great advantages in this regard. Through its own permeability, glass is able to bring people and people, human and nature closer together, to use refraction to strengthen the interaction between human and space, and to use brilliant and colourful effects to strengthen people's visual experience. The decoration of glass first began with windows, and the traditional figure and historical influence of medieval church glass can be seen in the more common European stained inlaid glass. In my opinion this is where the use of light and shadow in glass installation art originated. The space of light and shadow casted by the glass material gives the object of the installation a rich light effect and atmosphere. At the same time, light takes on a new dimension through the glass, achieving an overall harmony among the installation object, the glass and the light.

4.2 New Media Art

Contemporary art is constantly exploring the boundaries of art in terms of medium, materials and ways of seeing,

by breaking through boundaries, challenge perceptions and subvert ideas. New media art is an artwork or practice that uses forms of digital technology as a means of creation or presentation. In the Information Age between 1950 and 1970, New Media Art was gradually introduced to the world. At the beginning, New Media Art first demonstrated the relationship between artists and engineers/scientists, who together explored the links between art and technology in this wonderful relationship. It takes many forms of expression, nonetheless they have only one thing in common—the user is involved in changing the image, shape and even the meaning of the work through direct interaction with it. They trigger the transformation of the work in different ways—by touch, by moving through space, by making sounds among others. New media art in the digital age is a very broad term, characterized by the use of advanced technological language in artworks, including online virtual art created by computers, the internet and video, video art, as well as multimedia interactive installations and performances. With the involvement of intelligent environments, three-dimensional imaging, three-dimensional reality and multi-sensory technologies, installation art is more susceptible to the influence of high technology, the construction of various open-source platforms and the gradual spread of low-cost sensory technology. It is not just a change in creative approach compared to traditional art. The involvement of new media in art is generally a long-term and multifaceted combination. In the artist's practice, the use of the internet or other media has also allowed new media art to create a whole new space in contemporary art practice. Compared to the older visual arts, such as sculpture and traditional painting the focus of new media art is on guiding the viewer's interaction with the work through the creation of different new media. Sound, image, light and interaction, precise computer algorithms bring to life otherwise linear narratives of artworks. The bridge between virtual media and physical time is also being built with the introduction of 3D printing, which allows artists to fuse the computational basis of new media art with the traditional physical form of sculpture. British artist Jonty Hurwitz has created the first anamorphic sculpture through this technology.

New media interactive installation artworks are more motivating and interactive, and therefore participatory and immersive have become an important feature of the artworks. In the process of innovative development of installation art, the homogeneous and heterogeneous materials and new spatial forms shaped by new technologies have greatly enriched people's visual experience and sensory perception in the spatial environment. The boundaries of contemporary glass art have expanded into sociological, psychological and even political of science, so that glass art is no longer simply 'viewed', but read, understood, and thinking". Some of the exhibits have moved away from the purely stylistic constraints of glass sculpture, incorporating spatial light, visual touch, audio and video. Some of the exhibits have moved away from the purely formal confines of glass sculpture, integrating spatial light, visual touch, audio and video, and provoking thought in the viewer.

5. Glass Art with Technology

5.1 Artists' Works

As early as the 1970s, there were already excellent works that combined glass art with other media, using glass as a material in installations. Richard Harned (born 1951) is a contemporary kinetic sculptor and glass artist. Harned has been an important artist of American Glass movement starting in the 1970s. Harned's work has evolved from small utilitarian pieces and abstract glass objects to room-sized kinetic sculpture built to explore the use of light, movement, and technology in art. His message is about the connection of ideas to the dynamism of the physical world. His sculpture combines the aesthetic beauty of glass with the drama of complex moving constructions, embellished with decorative and symbolic elements. His pieces are often presented with a humorous post-modern warning about technology's impact on nature. The kinematic works of the 1980s and 90s were built with elements of welded steel, often combined with neon and glass, rotating television monitors, computers, and globes. He floated neon and fluorescent light sculptures in water, combining the natural reflection of water with the glow of artificial light, and the unnatural mix of electricity and water. For example, his works "*God's Eye*" is made from neon and colored sheet glass (Figure 4).

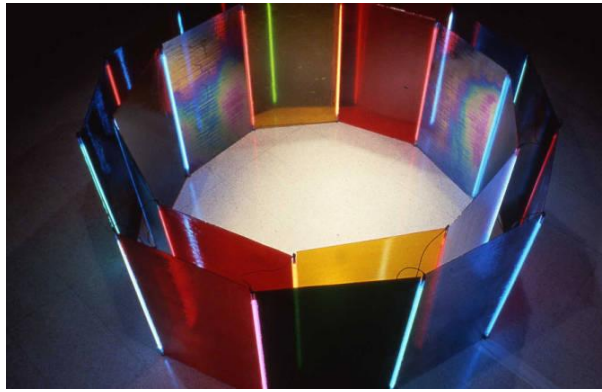


Figure 4. Richard Harned, *God's Eyes*, United States, 1983

Source: <<https://digital-collections.columbuslibrary.org/digital/collection/p16802coll38/id/11863>> [accessed 20 May 2021]

It can be argued that technology is redefining art in strange, new ways. The application of new media in art has become a trend which I predict will continue in the future. Artists can use interdisciplinary knowledge for divergent thinking, establish their own artistic language and original values. In contemporary, art and technology become more and more intertwined, and many contemporary artists choose new types of media to create their works. There are some examples of artists who demonstrate that application of new media (such as light, sound, electronic) in art has become a new trend. For instance, the immersive large-scale light-based installation *Field of Light* from Bruce Munro mixed media (optical fibre, glass, acrylic, light source) which is inspired by his interest in shared human experience (Figure 5). Travelling through the red desert of central Australia to Uluru in 1992, Munro felt a strong connection to the energy, heat and brightness of the desert landscape, which he recorded in his ever-present sketchbook. The light field is the embodiment of this experience. Munro recalls, “I wanted to create a field of illuminated stems, like dormant seeds in a dry desert, blossoming at dusk in a soft rhythm of light under a cover of blazing stars”. (Bruce Munro, 2016) The idea has been developing for over a decade and the first light field was created in the field behind his home in Wiltshire. Munro returned to the space that inspired him and travelled to Uluru in 2016 to install the light field.



Figure 5. Bruce Munro, *Field of Light*, Uluru, 2016

Source: <brucemunro.co.uk/work/field-of-light/> [accessed 28 March 2022]

Dutch artists Lonneke Gordijn (1980) and Ralph Nauta (1978) founded studio DRIFT in 2007. With a

multi-disciplinary team of 64, they work on experiential sculptures, installations and performances. The spatial kinetic installation from Studio Drift's kinetic glass work, *in 20 steps*, is a tribute to humanity's quest for flight (Figure 6). (Winston Anna, 2015) They created an installation which was constructed of thin glass bars and all of the pairs. It moves at different times to represent all the different steps of flying in an abstract way that moves like wings flap slowly. The fragile glass bars are suspended by invisible plastic wires, held in place by delicate brass edgings and operated by a complex electronic system. They are not stuck with the interpretation of glass in the traditional context. The glass emphasises movement and the fragility of nature itself. At the same time, the moving glass breaks up the natural light in the space and reflects it in the moving light. The addition of metal and other elements, electric devices, and the transformation of the creation and display environment have added new vitality to the glass. The studio focuses on the intersection between design, art and technology. Their previous projects include a mirror made from chemical waste, a plexiglass chair with a ghostly shape inside and a battery-powered LED lamp covered in dandelion seeds. This studio's concept is particularly intriguing since it seeks to integrate nature and technology by combining current knowledge and imaginative intuition and convey nature via technology and establish a balance between the two.

Materials and techniques are simply instruments, humans are the only true resource We prefer to know what the artist is thinking, what concepts he is communicating, and what the spectator finds meaningful. What strikes a chord with the viewer? The boundaries of modern glass art have been steadily eroded to the point that glass art is no longer only "seeing," but also reading, comprehending, and thinking. Some of the pieces have beyond the strictly artistic limitations of glass sculpture by including spatial light, visual touch, audio-visual, and kinetic installations, and by compelling the observer to examine and interact with them.

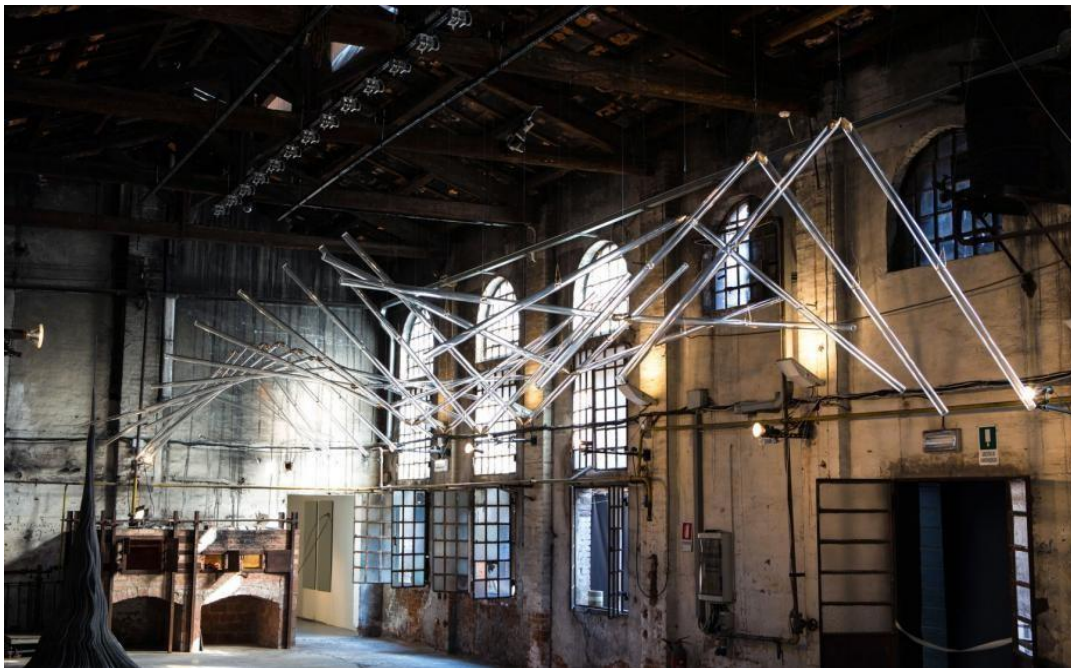


Figure 6. Studio Drift, *In 20Steps*, Venice Art Biennale, 2015

Source: <<https://www.dezeen.com/2015/06/05/in-20-steps-installation-studio-drift/>> [accessed 16 August 2021]

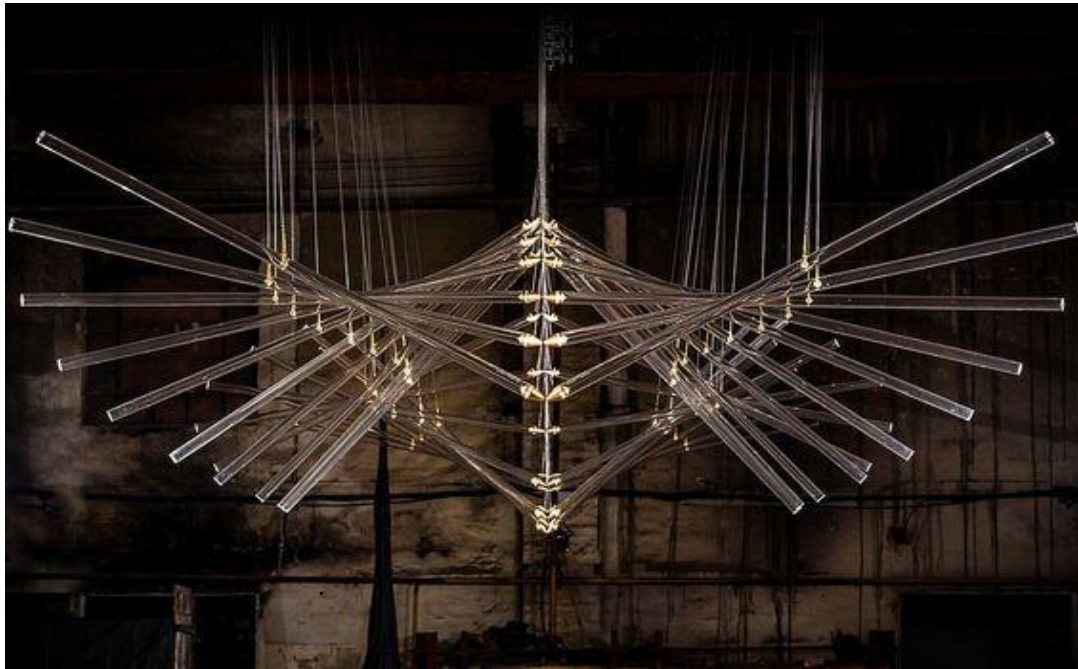


Figure 7. Studio Drift, *In 20 Steps*, Venice Art Biennale, 2015, Part 1

Source: <<https://www.dezeen.com/2015/06/05/in-20-steps-installation-studio-drift/>> [accessed 16 August 2021]

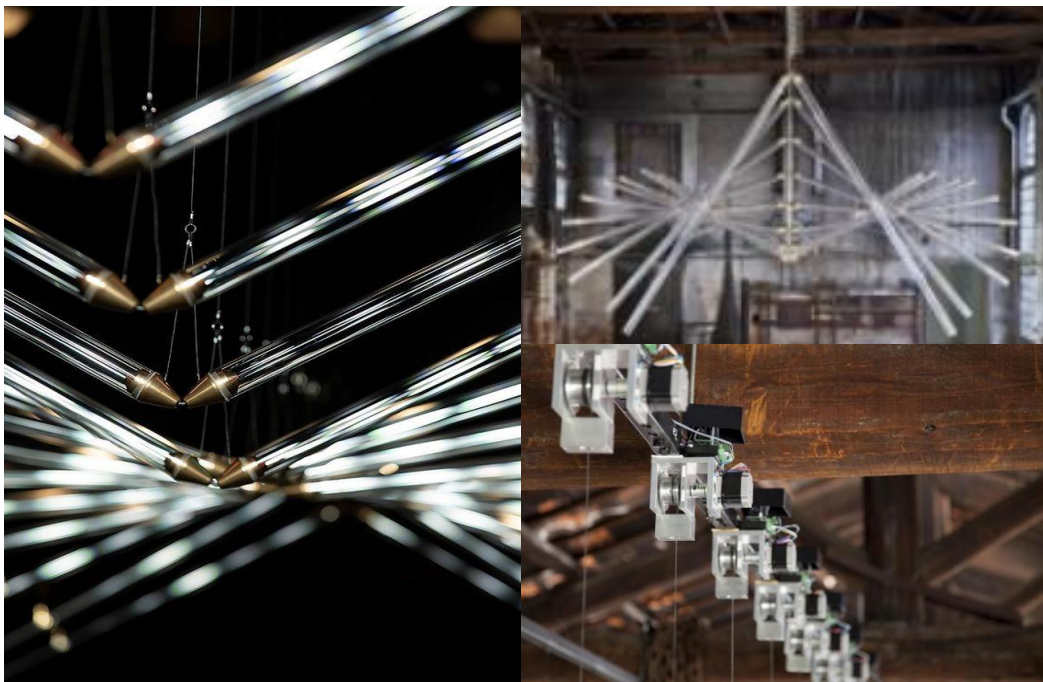


Figure 8. Studio Drift, *In 20 Steps*, Venice Art Biennale, 2015, Part 2

Source: <<https://www.dezeen.com/2015/06/05/in-20-steps-installation-studio-drift/>> [accessed 16 August 2021]

With the advent of the intelligent era comes a shift in artistic expression. As a state of installation art, the artists in the instance of New Media installation art the importance of aesthetic and truthful expression must be emphasized. Compared to solely mechanical installations, new media art is more artistic. The aesthetics of new media installations entice the observer to interact with and view the artwork. Installation in new media installation design, the structure of the materials, the artistry of the forms, the choice of colors, proportions, and size are of great important. The artist uses their unique aesthetics and notions to convey their messages through

their artworks. Additionally, artists may have a sense of spiritual connection and visual shock. Obviously, a successful new media exhibit combines art and technology. It is clear that the relationship between art and technology has given rise to many exciting new works and techniques.

Another work from a Japanese artist named Rui Sasaki, *Liquid Sunshine* installation, blown glass with phosphorescent material: When visitors enter the room, a series of phosphorescent glass drops will light up the light source (Figure 9 & 10). The installation covers all the rooms and contains more than 200 “little raindrops” of blown glass, containing phosphorescent raw materials that digest and absorb the simulating sunlight. The broad-spectrum lights installed in the room are changed by a motion detector. When some people enter the room, the lighting effect will be turned off, leaving only the outlines of the raindrops and seeing the phosphorescent glowing in the dark. When creating this installation, the artist asked herself “How can I visualize sunshine in glass?” Rui was interested in using phosphorescent glass to capture sunlight, as she did not get much of it in Toyama. “Living in a cloudy environment helped me realize how vital sunshine is for me both mentally and physically,” said the artist. (Aušrys Uptas, 2021) As far as I am concerned, through their works, we can see an effective combination of glass art and technology. We can understand to what extent these artists have succeeded in combining modern technologies such as sound, light and electricity to bring different dimensions of the sensory experience to the spectator.

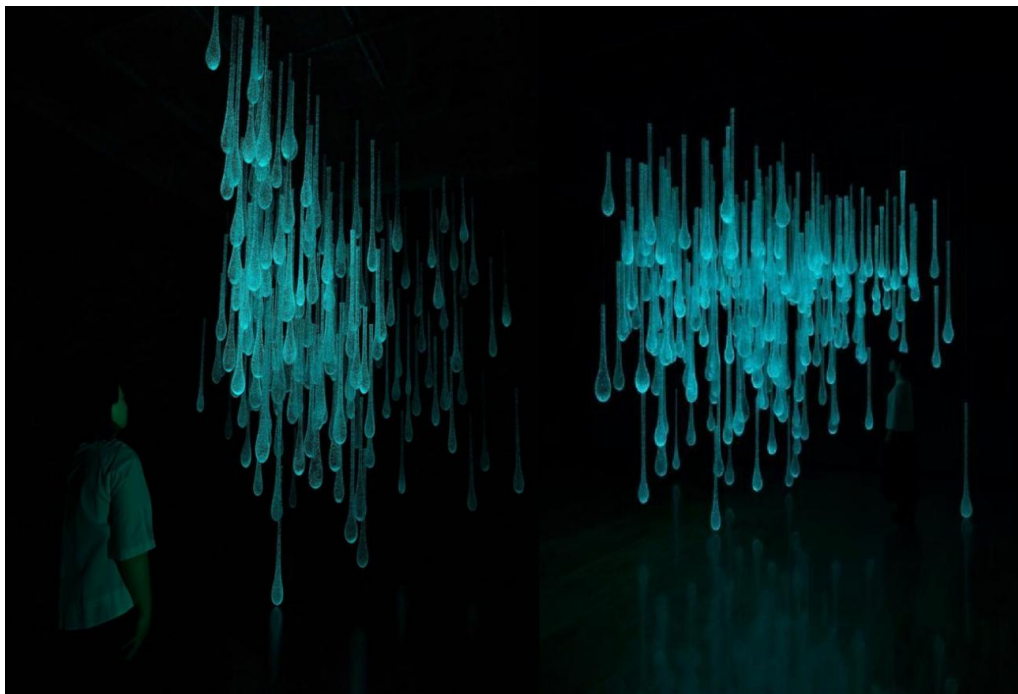


Figure 9. Rui Sasaki, *Liquid Sunshine / I am a Pluviophile*, Japan, Kanazawa, Ishikawa, 2018

Source: <[https:// www.demilked.com/glowing-glass-art-rui-sasaki/](https://www.demilked.com/glowing-glass-art-rui-sasaki/)> [accessed 16 August 2021]

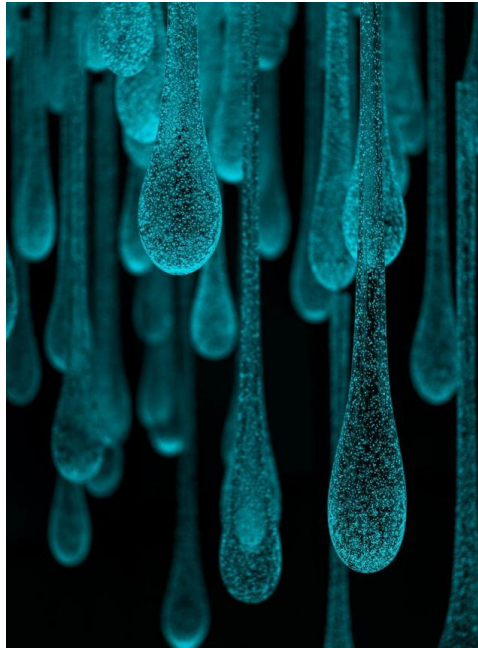


Figure 10. Rui Sasaki, *Liquid Sunshine / I am a Pluviophile*, Japan, Kanazawa, Ishikawa, 2018

Source: <<https://urbanglass.org/glass/detail/corning-reveals-the-work-of-rui-sasaki-the-creator-of-the-33rd-rakow-commission>> [accessed 27 August 2021]

American artist Stephen Knapp says he has always been fascinated by light and wanted to find a unique way to use it to express himself. His art installation *Lightpaintings* has been described as the first new artistic medium of the 21st century, a work that makes the light around us ‘visible’, ‘materialising’ light as an essentially inscrutable substance (Figure 11 & 12) “materialised”. The work has the personality of painting, sculpture and architecture, but uses only light and dichroic glass to project a wide range of colors onto the room and walls. In constructing the installation, Knapp worked intuitively to design the colour blocks of intricate light. The work is made using special glass with metallic layers that function as a selective prism, dividing the focused light in different wavelengths of the spectrum. In his studio, Knapp cuts, shapes and polishes glass to create a palette with which he can refract and reflect light on and around a surface. *Lightpaintings* have been called “light sculpture”, “new media”, “kinetic” and much more as viewers try to describe this new medium. (Stephen Knapp, 2006)



Figure 11. Stephen Knapp, *Lightpaintings—First Symphony*, Ball State University, Muncie, Indiana light, glass, stainless steel 23’ x 40’ x 1’, 2006

Source: <<http://www.lightpaintings.com/public-art>> [accessed 25 May 2022]



Figure 12. Stephen Knapp *The Definition of Possible*, Worcester Polytechnic Institute, Worcester, Massachusetts
light, glass stainless steel 16' x 37' x 1', 2014

Source: <<http://www.lightpaintings.com/public-art>> [accessed 25 May 2022]

5.2 My Work

In my postgraduate career, I have chosen the material of glass as a medium through which I wish to express my ideas. Understanding and analyzing materials is a quality that an artist must study. *The Yangtze River project* I created for my undergraduate graduation work was the inspiration for the direction of my research (Figure 13). In this creation, I have experimented with how to combine a traditional material like jade with light installations, trying to find a new form of presentation. A strip of running lights is installed at the bottom of the jade, and whenever the audience approaches, the “river body” will light up due to the sensing device, creating a feeling of water flowing through it under the flow of lights, driving the audience to walk through the whole Yangtze River together, creating a novel visual effect. My work is breaking the perception of the traditional material of jade, allowing it to be combined with technological media and presented to the public in a new way. Although this work is not made of glass, it is a creative translation and exploration of my use of traditional materials in a contemporary context, merging them with new technology or ways of perceiving.



Figure 13. Ziye Shen, *The Yangtze Project*, China, 2021, <Photo credit: self-taken>

In addition, my first project named *Microcosm* was created in my first semester of MA1 studies which was also exploring the integration of glass and light, combining the material of glass with some new media. My inspiration for this project is René Roubicek's "Form" (1959), on exhibition in the V&A museum. I am attracted by the uniqueness and quirkiness of this sculpture. Rubicek also works with colourful geometric forms that often include light. The dependence of glass materials on light sources has led many artists to explore the phenomenon of light in glass materials. The element of light, as a fundamental component of glass art, gives glass its unique artistic appeal through its emissivity, light transmission and colorfulness. Inspired by this, I aim to combine sculpture with product design, to try the combination of art and design. I have worked on designing colourful lighting objects that explore transparent and opaque colors and the interplay of shadow and light. Although I am still at a very early stage of experimentation, I am still practising my mastery and use of materials. It may not seem like a complete piece of work yet, but I will continue to experiment with other new media elements and glass in my future works.



Figure 14. Ziyi Shen, *Microcosm (Hand-blown Glass)*, 35x45cm, 2021, <Photo credit: self-taken>

6. Conclusion

Today, glass is still an eye-catching medium of visual expression, in addition to being an all-round artistic material. The art of glass has a long history and many glassmakers around the world have been exploring the unique properties of the material from ancient times to the present day. In conclusion, this essay has investigated the connection between the artist and their raw material in the fabrication of glass art. In the context of contemporary art, art and technology have long been inseparable from a certain connection, whether it is in the exploration of technology or the language of art forms. The development of technology and art together is now an inevitable trend for the future of art. Breaking away from preconceived notions of glassworks and creating conceptual art through the medium, glass art is flourishing in the contemporary art scene and more and more artists are using glass to explore more and more possibilities. Some artists started from materials and made some new attempts to combine works with new media. In the continuous experiment and perception, artists gradually found the relationship between material and themselves, explored the characteristics of materials and their own artistic language fit. From my perspective, the beauty of installation art depends on its universally different raw materials, media and natural environment for the creation of challenging artworks. In the future, in my own major, I would like to do further exploration in this area, and try to do some installation art by using glass material. I have investigated the connection between the artist and their raw material in the fabrication of glass art. In the context of contemporary art, art and technology have long been inseparable from a certain connection, whether it is in the exploration of technology or the language of art forms.

Art and technology have a complex and meaningful history of collaboration and influence on each other. In many ways, they have developed alongside each other to reach the position they occupy in the world today. In the digital age they are constantly overlapping and portraying new ideas. In the framework of modern art which

is flourished with multiculturalism creative thought and artistic design forms in glass artworks have evolved in a number of ways. Through the research and analysis of the diversity of glass art language in the context of modern art development, we have come to understand that the aesthetics of art design can be impacted by the creative values of various eras. Nonetheless, the distinctions between places and lifestyles can also impose limits on the creation of art. Therefore, artists must follow the evolution of the times, recognize the fundamental connotation of cultural values, and realize the diverse growth of modern art through a variety of value analyses and aesthetic designs. To conclude, this essay stands in line with Van Dien's explanation 'The first step in combining art and technology may not be to produce a practical product, but it has great potential in itself to transform into an applied one and to foreshadow future lifestyles, and artistic innovation has always inspired new understandings of creativity.' (Van Dien, 2019)

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