

## *Celtic Nightshade*

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*Celtic Nightshade* blends various inspirations such as: Irish fairy folklore, magical herbalism, and spirituality into elegant eveningwear. 3D printing technology was used to create the garment's embellishments that were combined with hand embroidery. The main objective of this garment was to investigate the use of 3d printing for embellishments. This usage of 3D printing technology provides knowledge related to the integration of custom 3D printed embellishments created via an additive process that produces minimal waste.

Fairies of traditional folklore in Ireland are known as the Sidhe (Illes, 2009). These elemental spirits are not the whimsical creatures associated with animated children's movies. Ancient stories of the Sidhe were used as cautionary tales to keep people from straying too far from villages or homes. While some fairies were known to bestow good luck, most were interested in enslaving or mating with humans (Froud, 1998). According to legend, if an individual was kidnapped by a fairy they were never seen again. Sometimes the kidnapping was meant to punish a family that had done unspeakable harm to fairies, such as building on their sacred lands (Silver, 1986). Fairies were very protective of locations that were places of revel or ceremony; those that disturbed these areas, according to folklore tradition, were often abducted. Farmers who tilled the land found their cows sick, harvest spoiled, or children missing forever. The employment of cunning folk or fairy doctors to achieve peace with irascible fairies was not uncommon in Ireland (Correll, 2005).

Some accounts of seeing or dealing with fairies were attributed to hallucinations caused by sickness, hallucinogens, and madness. Hallucinogens such as nightshade also were also used in Paganism and Witchcraft to achieve a feeling of flight or cosmic travel. Witches in folklore propaganda would anoint brooms and ride them in a metaphorical sense to induce visions, meetings with magical creatures, and perform spells of malicious intent (Frandsen, 1999). Today, the plant is used as a component for analgesics and vertigo treatments (Elpel, 2015). Therefore, nightshade was selected as an inspiration due to its magical folklore and hallucinogenic properties.

Celtic knotwork was an important inspiration for the garment's silhouette and the template used for embroidery. This knotwork is not original to Ireland, but was used to illustrate the Book of Kells and has become part of Ireland's heritage (Liphart, 2014). The dominant knotwork designs examined were the Dara knots and the Triquetra. The silhouette of the dress was inspired by the triquetra's bottom two knots that rise upward in the middle. The garment was designed to rise from center back to a short length at the side seams and then fall to the same length at center front. The embroidery of the dress references the dara knot that involves sharp turns and shapely line work.

The design process began with application of color to fabric. Using acid dyes, silk crepe de chine was colored by wetting only 60 percent before submersion into the dye bath. This allowed the dye to create diffuse patterns of light and dark hues. Chartreuse was chosen as the dye color to represent the vibrant greenery of Ireland in the spring. The mordant used in the dye bath was citric acid. The dye bath was carefully monitored and the temperature never surpassed 180 degrees Fahrenheit. This step was crucial to avoid boiling away the natural luster of silk. The silk was dyed for twenty minutes before it was removed to cool. Once the silk was cooled it was washed by hand in cool water to remove excess dye and then air dried for twenty-four hours.

The pattern for the dress was draped using muslin on a size six dress form. Once the patterns were draped they were transferred to paper and manipulated further. Additional volume was added to the skirt on both the front and back. The upper bodice pattern pieces were shaped like leaves to reiterate the natural bond between fairies and nature. Polyester tulle was embroidered by hand using a chain stitch to recreate the curvilinear designs of Celtic Dara knotwork. A supportive running stitch was completed by hand through both the tulle and silk to help bond and balance the two different fabrics. This was crucial as the silk crepe de chine would collapse away from the tulle in a

final garment. Lambskin was selected for the back-bodice pieces and provides a modern urban contrast to the romantic essence of the silk, embroidery, and embellishments. This leather matches the faux leather trim used to finish the hem of the dress. Polyester taffeta was employed as the lining and it provides structure for the upper layers of silk and tulle.

This dress was beaded with 100 embellishments and 82% of them were 3D printed. These 3D printed embellishments were designed using Rhinoceros 3D modeling software and printed on a Makerbot Fifth Generation 3D Printer in polylactic acid (PLA), a biodegradable polymer. This sustainable additive approach of production does not create the waste of more traditional methods of bead and jewelry making (Vanderploeg, Lee, & Mamp, 2016). 3D modeling allowed the designer to create customized embellishments. Nightshade anatomy dictated the form of the primary embellishment. Over 95 embellishments were produced for this creative endeavor. Two sizes of nightshade were developed with curved petals and the unified five stamens. Leaf shaped beads in two different sizes transform the Celtic knotwork embroidery into the stalks of nightshade plants. Nightshade bloom shapes act as a framing device for purchased decorative objects. These were chosen to represent the toxic berries produced by nightshade plants and add a twinkling quality to the dress. All embellishments were cleaned, sanded by hand, and painted if necessary. The nightshade bloom embellishments were painted to represent the real coloring of the flowers and pistil using acrylic paints.

*Celtic Nightshade* is a folkloric presentation that amalgamates modern technology with various concepts of mysticism. The use of 3D printing along with traditional techniques such as embroidery and silk dyeing created a unique garment that honors the ancient folklore of Ireland and mysticism in a contemporary fashion context.

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