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Electroforming on ceramic

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ELECTROFORMING ON CERAMIC

by

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A thesis submitted in partial fulfillment of the requirements
for graduation with Honors in the Art, Studio

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Spring 2017

All requirements for graduation with Honors in the
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ELECTROFORMING ON CERAMIC

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Spring 2017

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Electroforming is a very fascinating technique in metalsmithing. Through this project I want to learn how to use electroforming to create an organic shape and effect. Many artists often think the nodules resulting from the electroforming are very annoying, and ugly. I think they are very beautiful. Through this research, I want to learn how to manipulate the process of electroforming to turn something considered ugly into something beautiful. I was inspired by the jelly fish when I was looking for ideas for this project. The form of the jellyfish is very simple, but also complicated.

Initially, I learned and tested how nodules grow when electroforming. Some materials are not qualified for the electroform tank, such as any kinds of organic matter. This has limited the material I can choose from. After experimenting, I found that ceramic is a perfect object which will not react with the chemical in the solution. I made a white jelly fish as the ceramic base. I was planning to electroform the legs of the jellyfish, but discovered the deep gap between the jelly fish tentacles affects how copper develops on the ceramic base. It is harder to lay down copper when the gap is deep or narrow. To work with this challenge, I decided to use copper wire for some of the legs, and use ceramic to make the other legs, creating a more diverse form. The ceramic legs were larger and more interesting shape. The copper wire was easier to manipulate into the desired form. The legs were attached the body by plastic and resin. I electroformed the top with plastic to create a textured surface. To create the glowing effect, I added some LED string light on the inner surface. The finished product will hang from a higher level so people can see the jellyfish from different angles.

From the process of learning electroforming on ceramic, I learned many techniques. First, having a high electrical voltage can burn the copper, but it can also grow beautiful nodules. It is important to have good control of the amount of voltage that is going through the copper. Second, the gap on the object can be tricky. The deeper and narrower the gap is, the harder it is for copper to lay on. Third, choosing the material can affect the result of the copper growing. Not only the material itself will affect the process, but so will the surface. It is easier for the the copper to grow the nodules on the textured area than on the smoother area. Last, I want to continue to work with electroforming on other material to create more different effects. I would like to use electroforming as painting on metal or other materials in the future.