

Report

Summer 2019 Internship

Company: DyStar

Introduction

At DyStar LP, located in Charlotte, I worked as a Textile Auxiliaries R&D Intern primarily with Viviana Donate and Allan Hughes on two different projects. The projects highlighted the improvement of the DyStar product for water repellency and evaluation of DyStar product for low formaldehyde-containing resin.

I started my internship on 28th May 2019. There was another NC State student who was interning, although it was on a different project. At DyStar, it was a very comfortable and welcoming atmosphere that I experienced, and I was very excited about receiving my deskpace and technologies to work with! The first week was mostly introductory and initiation, meeting the team and getting to know the employees and the team's expectations from me. The HR also made sure the administrative work was hassle-free. The transition from week 1 to week 2, in terms of workload, was smooth and great! By then, I had settled in and forged relations with the team and other employees and set a routine for myself for weeks to come.

Work

As the Textiles Auxiliaries R&D intern, it was my responsibility to carry out applications, and fabric testing for easy-care resin finish and water repellency finish. One of the main disadvantages of cotton fabrics is wrinkling after washing. Easy-care and durable press finishes are generally applied to overcome such issues. In addition to the dimensional stability that can be achieved, the stand and hand of pile fabrics are typically improved by these finishes too. Water repellency is found to be one of the most common functional properties which are required for protective clothing without affecting the user's comfort ability. Water repellency can be defined as the ability of a textile material to "resist wetting."

With a background in these two finishing applications since my undergraduate studies in India, I felt at ease working with the chemicals and learning something new about DyStar's product range. Over the next couple of weeks, I attended safety sessions and product evaluation meetings with the Safety Manager, Viviana, and Allan as well as bi-weekly updates to the Business Manager. After our goals were established, it was time to be inducted into the application work in the R&D lab.

To ensure I was familiar with the equipment I would be working on, I was given some trial samples to practice. I was successfully able to pick up the skills and techniques within a day and started the main project work immediately. With Project 1 that comprised of the Water Repellency studies, we had two goals in mind:

- i) Stability of agent
- ii) Performance study

Part i) was carried over a month while different agents were studied and tested on fabrics such as cotton, polyester, and their blends in part ii), for the duration of the internship.

With Project 2 that comprised of the Easy-care Resin finish, I had to ensure the formaldehyde content on the cotton fabrics were low and therefore, performance studies were conducted for the same. In recent times, formaldehyde has been a known hazard to health with its potential to irritate (especially to the eyes and respiratory tract) and the ability to trigger skin allergy in susceptible individuals. The Oeko-Tex Standard 100 is a European-wide labeling scheme intended to offer consumers assurances that the textiles around them contain no substances harmful to health. The current standards to maximum fabric concentrations of formaldehyde for Oeko-Tex Standard 100 are measured according to Japanese Law in ppm and are typically less than 75ppm for adult clothing.

For both the projects, it was my responsibility to prepare the formulation baths, apply it to the fabrics, and test it. Immediately after testing, I would upload my results onto a shared drive which my team created. With the stability study, I had scheduled weekly checks on my calendar to make observations and note them down. I maintained an independent report and a PowerPoint presentation as well.

For Project 2, we had to prepare a report and presentation for a client additionally, and my managers were quite pleased with it, as well as the way the study was conducted. I was able to bring my discipline and knowledge breadth from my school research to the table. During the internship, there was a period when I was the only team member present in the office, but I diligently completed all my scheduled tasks ahead of time and simultaneously was able to catch up on some of my school research work.

The work environment at DyStar LP was amazing. Everyone was extremely helpful and kind. The break room was a good place to hang out and eat lunch while discussing both work and non-work-related topics. Some days, we even had free ice-cream or a cake to celebrate an employee's birthday! Since I like to bake, I brought some home-made desserts for my group that they loved. Apart from all this, we had a mid-year sales meeting that went on for two days, and I was given the opportunity to present my work and make a sales pitch to the team. I was also taken for a social outing to 'Top Golf' for team activity which was splendid fun! Overall my internship at DyStar has taught me a great deal about work-life-balance and corporate lifestyle. I hope to apply these learnings and work ethics to my academic life and future endeavors.