

Senior Design Weekly Status Report1

sddec19-07: Rapid detection of Fentanyl using a multifunction nanostructured substrate

Week 1 Report

January 4 - February 8

Team Members:

Yifu Zhang - Stationary phase fabrication group

Zheyuan Tang - Stationary phase fabrication group

Hao Wang - Testing group

Ugerah Abalu - Testing group

Kossi Eglu - instrumentation group

Olouwole Eteka - instrumentation group

Client & Advisor:

Meng Lu

Summary of the Progress:

So far, our overall progress has built the communication ways with team members, meet with project advisor, get roughly ideas about the project and assign the roles.

In details, team members and advisor communicate and share documents through google doc and Slack. In addition, all of us has watched video and read paper about chromatography. We divided the whole team into three small groups (Fabrication group, Testing group, Instrumentation group)

Pending Issues:

1. Choosing the appropriate material for fabrication
 2. Figure out the necessary components for the instrumentation (read data and analyze it) part of the project
 3. Get familiar with Chromatography.
 - 4 Learn the principle of glancing angle deposition(GLAD)
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Individual Contributions:(Individual)

Name	Contribution	Working hours
Yifu Zhang	<ol style="list-style-type: none">1. Read the paper about the working principle for Biosensor, and its simple fabrication process.2. Attended the weekly group meeting and ask the question about confusing part during the meeting with the advisor.3. Work on the team reflection assignment 1, contribute the idea to setting the role to each team member.4. Take the online safety training course for accessing to chemical lab	4
Hao Wang	<ol style="list-style-type: none">1. Watch the introduction video about thin layer Chromatography.2. Read through the paper “ Ultrathin-layer chromatography on SiO₂, Al₂O₃,TiO₂,and ZrO₂ nanostructured thin films.3. Contact with team members and arrange time for meeting.4. Take the safety training online course for accessing to the lab	6
Zheyuan Tang	<ol style="list-style-type: none">1. Read the relative paper about chromatography experiment (Wannenmacher, Julia, et al. "Ultrathin-layer chromatography on SiO₂, Al₂O₃, TiO₂, and ZrO₂ nanostructured thin films." <i>Journal of Chromatography A</i> 1318 (2013): 234-243.)2. Read the review paper about glancing angle deposition fabrication process.(Taschuk, Michael T., Matthew M. Hawkeye, and Michael J. Brett. "Glancing angle deposition." <i>Handbook of Deposition Technologies for Films and Coatings (Third Edition)</i>. 2010. 621-678.)3. Communicate with team members and talk about the detail of project plan.4. Take the online safety training course for accessing to chemical lab	6

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Ugerah Abalu		
Kossi Eglá	<ol style="list-style-type: none">1. Meet with team to create group2. Go get the access form for the lab we are going to work in3. Meet with the professor Meng Lu to discuss about general idea about the project4. Take the online safety training course for accessing to chemical lab	4
Olouwole Eteka	<ol style="list-style-type: none">1. Take the safety training and request the access to the chemical lab.2. Learn about the “Thin layer chromatography” process.3. Get more information from the advisor/client by asking questions at the meeting.	4

Plans for Upcoming Reporting Period:

For next week, each group are going to start with the project.

Fabrication group follow with graduate mentor Mingdian Liu, start learning the detail about glancing angle deposition(GLAD)

Instrumentation group follow with graduate mentor Qingming Zhang

Chromatography test group follow with advisor Meng Lu try use Chromatography to analysis sample.

Fabrication group:

Yifu Zhang & Zheyuan Tang: Research the appropriate material option on stationary phase and learning the process of glancing angle deposition by E-beam.

Chromatography testing group:

Hao Wang & Ugerah Abalu: Get access to the lab in next week, Start exploring and working on chromatography testing.

Instrumentation group:

Kossi Eglá & Olouwole Eteka: think about the system in charge of reading and analyzing the image on the “Thin layer Chromatography” paper.