

Train of trainer Report

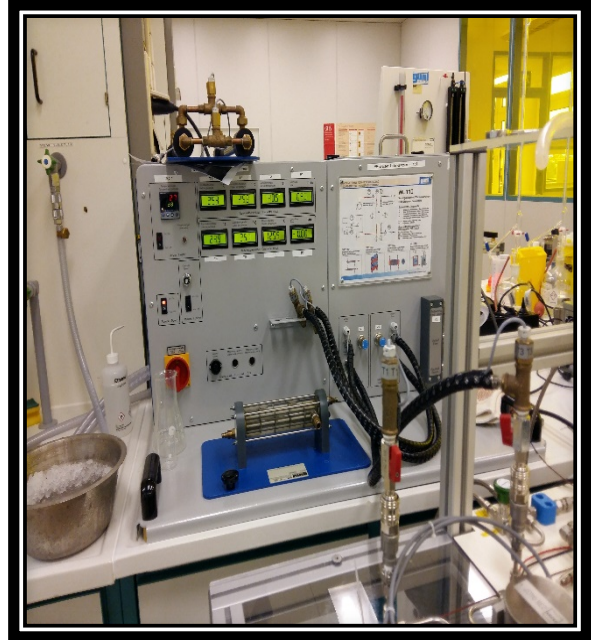
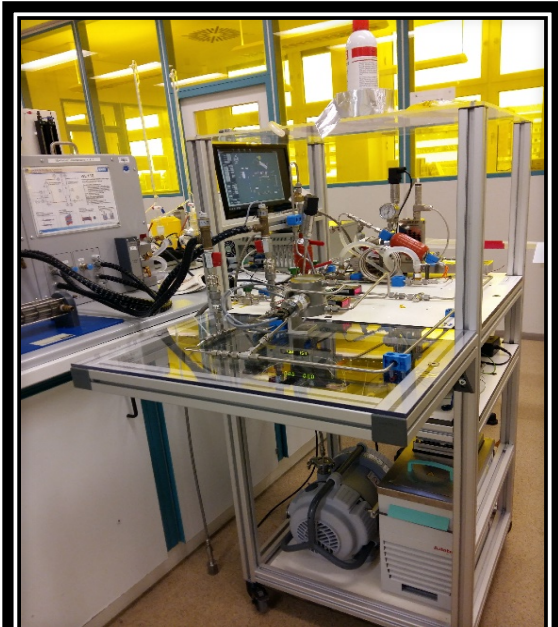
TH Köln -Cologne- Germany (14th Aug – 16th Oct, 2015)

Masarra Al Mallah

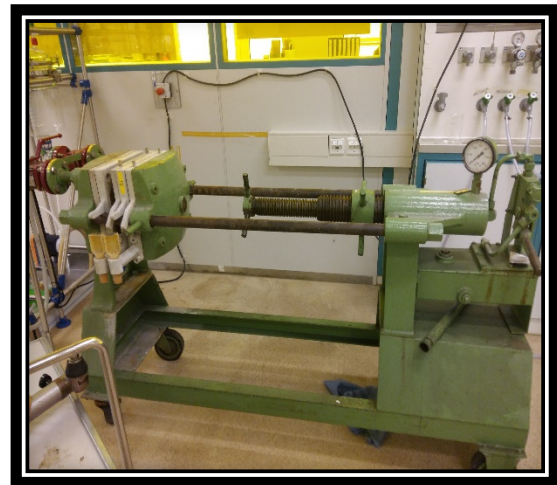
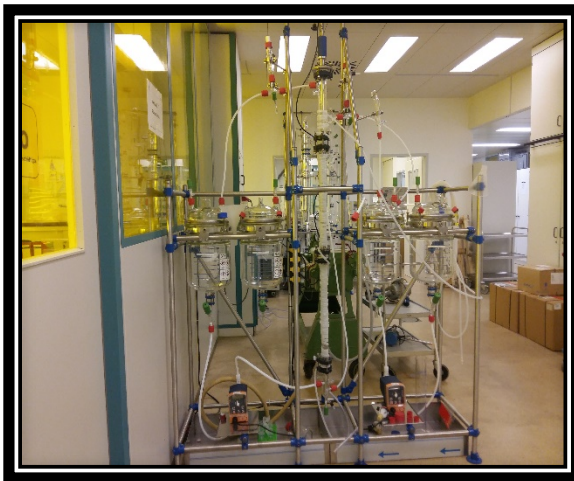
Cologne is one of the biggest cities in Germany and it is located on both sides of the Rhine River. It has a beautiful nature and scenes. In addition to these, one can get a very good study at its university (Cologne University of Applied Science (TH Köln)) in many different majors. One of these majors is Chemical pharmaceutical engineering in applied natural sciences department, which is located in Leverkusen chem-park campus where I had my training program for two amazing months.

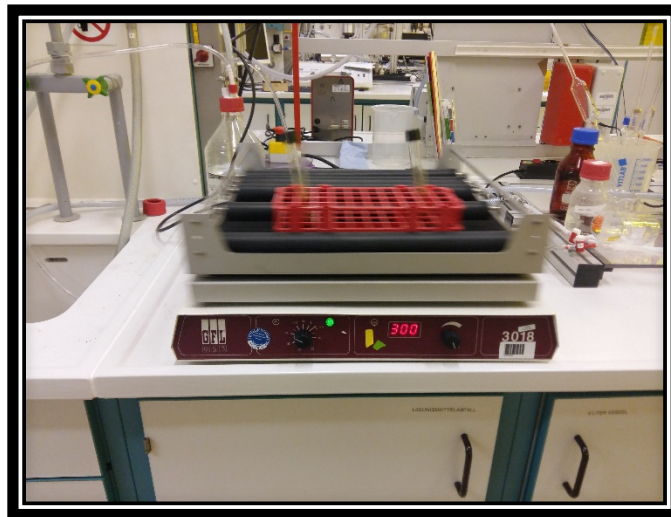
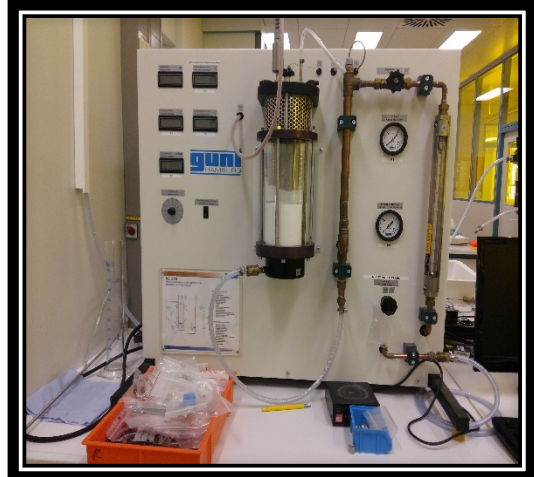
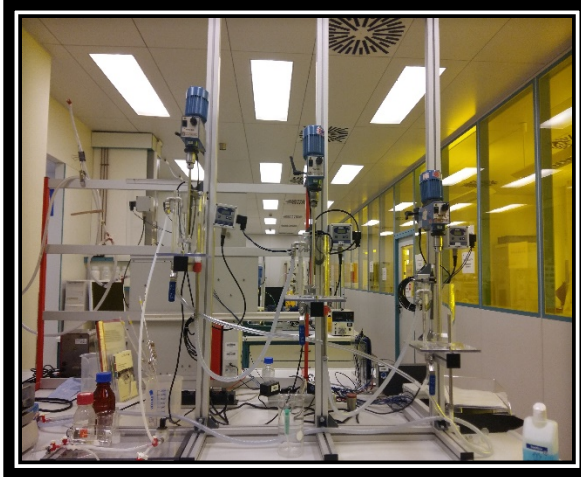
During the training period, I was under the care of Prof. Stephan Barbe. We were working together in this campus on a project for Cooling by Carbon dioxide. One of the examples for this application is to cool down microchips. Microchips usage increased rapidly these days due to the huge technology development. During the manufacturing of these chips laser is used to weld and combine different part on them so heating up will occur, cooling down is needed in order to keep the temperature relatively low enough to prevent the chips from damage. Water cannot be used as coolant! Here we can apply the concept of our project.

The Experiment was run by cooling down the hot water (simulated in the previous example as chips) in a tube using carbon dioxide at specific conditions (temperature and pressure) as shown in the following figures. Many trials were done and data were collected.

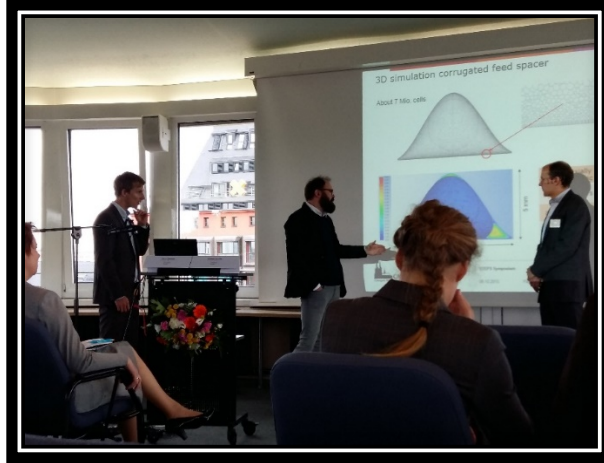


Another thing I learned during that time, the machines they use in different practical courses and a visit to different labs there. Picture for some instruments are shown in the following figures.





During my training, I have joined symposium for PhD students' project with different subjects at TH Köln, Claudiusstrasse campus. It was useful since many subjects were discussed in field of chemical engineering, chemistry and even biology during the two days. The following photo represents discussion between Prof. Barbe and one of PhD students.



Really, it was an excellent experience for me to visit Germany, to meet very nice people there, to know the German culture, to learn some German words and to get very useful knowledge in my major which resulting the improvement of myself and the way of my work regarding practical courses I give in German Jordanian University, and also to get some ideas of our future lab design in the permanent building.

Finally, I would like to thank everyone who helped me to reach this point. Special thanks to Dr. Andrea, Mr. Chris, Prof. Stephan and Ms. Martina. Big thanks to DAAD organization for financial support.



Vielen Dank 😊