STATEMENT OF PURPOSE

I am **Athithya Narayanan Balasubbramanian**, an Indian national from Telangana. My passport number is **xxx**. I have been admitted to the **University of Ulm** in Germany for a **Master's program in Chemical Engineering**. The course duration is **4 semesters**, starting from **xxx**. This program requires my physical presence in Germany. The purpose of this letter is to express my intent to study in Germany and my motivation for pursuing this course. I have completed the admission process and paid the required fees of **xxx** to the university. The language of instruction for this program is **English**. To demonstrate my English proficiency, I have taken the **IELTS** test on **11/11/2023**, achieving an overall score of **7.0 (Listening: 6.5, Reading: 7.0, Writing: 6.0, Speaking: 7.5).**

To start with my schooling, I completed my Secondary School Examination (Class 10th) from the Central Board of Secondary Education, Delhi, India. I passed this examination on 29/05/2018 with a grade of 72.8% (German Grade equivalent: 2.22). I then completed my Senior School Certificate Examination (Class 12th) from the same board on 13/07/2020, scoring 82% (German Grade equivalent: 1.81). In terms of extracurricular activities, I participated in an Inter House Basketball Tournament, achieving second position, and was awarded Best Outgoing Student by Narayana Group of Schools.

Currently, I am pursuing a **Bachelor of Technology in Chemical Engineering** at Sastra Deemed to be University, Tamil Nadu, India. My current CGPA is 7.20 (German Grade equivalent: 2.68) till the 7th semester, and I expect to graduate in 2024 only. Throughout my academic career, I have taken various courses such as Biology for Engineers, Engineering Chemistry, Basic Civil Engineering, Object Oriented Programming in C++, Technical Communication, Process Calculations, Applied Chemistry, and Engineering Mathematics.

For my Bachelor's project (2023-2024), I am working on the "Development of Zno Nanorods D-Mannitol Nanocomposite for Thermal Energy Storage". This research is focused on advancing thermal energy storage solutions to meet the growing global demand for efficient energy storage.

I have also participated in several training programs and workshops, including a Forensic Science workshop at IISc Bangalore, an OpenModelica Workshop conducted by ISHRAE-SASTRA in association with FOSSEE-IIT Bombay, and an ASPEN Workshop during the National Level Chemical Engineering Symposium at NIT Tiruchirappalli.

I have also obtained technical certificates in Aspen Plus V11 Masterclass, Supervised Machine Learning: Regression and Classification, and Oil & Gas Industry Operations and Markets.

My professional experience includes several internships in the chemical and pharmaceutical industries. I **interned at ANCO India Chemicals Private Limited in Chennai**, where I prepared reports on water treatment applications and laboratory instruments. At **Aurobindo Pharma Limited in Hyderabad,** I gained exposure to various unit processes and operations, data analytics, and quality control techniques. I also had brief internships at **Fleming Laboratories Limited and Solara Active Pharma Sciences Limited**, where I worked on solvent recovery and drug production processes. These experiences have given me practical insights into the chemical engineering field and have strengthened my resolve to pursue advanced studies in this area.

During my internship at **Orchid Pharma Ltd**., I realized something important. I saw the value of advanced chemical engineering in pharma and realised how crucial it was to understand chemical processes well. This is needed for efficient drug production. This experience made me realize that to contribute much to this field, I needed to grow my knowledge and skills beyond my bachelor's degree. At this point, I decided to get a master's degree in Chemical Engineering that would focus on advanced techniques and technologies.

The Master's program in Chemical Engineering at the University of Ulm offers several learning outcomes that are in line with my career goals:

- I will be able to design and optimize complex reaction systems. This is crucial for making efficient industrial processes as I need a deep understanding of chemical reaction speed and reactor design.
- Knowing energy science and how to use it in sustainable chemical processes will be vital. This is for making eco-friendly and energy-efficient chemical processes that are needed to address the growing need for sustainability in the industry.
- Internships will give practical experience in industry. They will bridge the gap between theory and the real world and this will prepare me for challenges in the professional world.
- I will get expertise in thermal and mechanical process engineering that is essential for industrial operations. It will allow me to design and manage unit operations well.
- I will gain skills in process simulation and modelling. They will let me predict and optimize process behaviour that is crucial for efficient and cost-effective plant operations.
- Improving research skills through lab work and internships will develop my analytical and problem-solving skills. It will prepare me for R&D roles in the industry.
- I will know how to integrate energy tech knowledge with chemical engineering. This will enable me to develop innovative solutions that will consider both process efficiency and energy sustainability.

Program Specifics

The program's structure is particularly appealing to me. It covers:

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4
•Chemical Reaction Engineering II •Energy Science and Technology I •External Engineering Internship (Industry) •Thermal Process Engineering II •Mechanical Process Engineering II •Simulation and Modelling	•Elective Modules Chemical Engineering •Energy Science and Technology II •Advanced Laboratory Chemical Engineering •Energy Technology Laboratory I •ASQ	•Simulation and Modelling of Multi-Phase-Reactors •Energy Science and Technology Seminar •Research Internship •Elective Modules Chemical Engineering •Energy Technology Laboratory II •Energy Science and Technology III	•Master Thesis

Why Germany?

Germany's reputation in chemical engineering and its industry connections make it an ideal place for my studies. The country is home to major chemical companies like BASF, Bayer, and Evonik that offer excellent networking. Germany is strongly committed to research and innovation in the chemical sector which matches with my goal of gaining knowledge in chemical engineering. The country focuses on Industry 4.0 and digitalization in manufacturing matches well with my interests in process optimization and automation. I am passionate about green chemistry and Germany leads in it while also using sustainable production methods. Also, Germany is multicultural as it has international research and industry collaborations. They offer valuable exposure to diverse perspectives in the field. These factors have influenced my decision to study in Germany. Germany has high education standards and strong industry-academia partnerships. All of this provides an environment that has both academic excellence and practical industry relevance.

Fit with the Institution

The University of Ulm is an ideal choice for my studies as it is ranked 542nd globally and 34th in Germany in the 2024 QS World University Rankings. It is also 201st in engineering in the US News Best Global Universities. The university offers a high-quality education and focuses on research. This is clear from its many research centres including the Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW). Ulm University has strong industry connections that are especially strong in the chemical and pharmaceutical sectors. The university's emphasis on interdisciplinary research, provides a unique learning environment. Its state-of-the-art laboratories and facilities offer excellent resources for practical learning. These factors make it the perfect place for me that include both the university's reputation and research output making me want to pursue my master's degree there.

Future Goals- After I finish my master's degree, I want to work as a Process Engineer. I want to work in a top chemical or drug company in India like Dr. Reddy's Laboratories, Reliance Industries, Sun Pharmaceutical Industries, or Lupin Limited. In the short term, I hope to gain 3-5 years of industry experience, applying the advanced knowledge and skills I will acquire during my studies. My long-term goal is to become a Senior Chemical Engineer or Research Scientist. I want to lead projects on developing sustainable and efficient chemical processes. I believe I will gain key knowledge and skills from this program that will be vital for achieving my goals and for advancing chemical engineering.

I am excited about the opportunity to pursue my Master's in Chemical Engineering at the University of Ulm. I am sure that this education in Germany will give me the advanced knowledge and skills I need. I will use these to make meaningful contributions to chemical engineering in India and beyond.

Sincerely,

Athithya Narayanan Balasubbramanian