STATEMENT OF PURPOSE:

I AM A FINAL YEAR STUDENT OF THE TWO YEARS MASTERS PROGRAM IN CHEMISTRY AT INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR. I AM APPLYING FOR AN ADMISSION TO THE CHEMISTRY GRADUATE PROGRAM AT IIT KHARAGPUR SCIENCE HAS ALWAYS FASCINATED ME BECAUSE ITS LOGICAL CONCLUSIONS ALWAYS FULFILLED MY DESIRE TO UNDERSTAND NATURE. I UNDERTOOK CHEMISTRY AS A MAJOR IN UNDERGRADUATE LEVEL BECAUSE I FIND CHEMISTRY A CENTRAL AND FLOURISHING SCIENCE THAT VENTURES INTO THE TERRITORIES OF OTHER SCIENCES. THE LIVELINESS OF CHEMICAL SCIENCE LIES IN ITS LOGICAL INTERPRETATION OF MICROSCOPIC EVENTS AND THIS FEATURE HAS ALWAYS ATTRACTED ME. MY CAREER GOAL IS TO DO RESEARCH ON APPLICATION BASED CHEMISTRY. MY PASSION FOR RESEARCH HAS DRIVEN ME TO APPLY FOR A JOINT PH.D. PROGRAM IN IIT KHARAGPUR AND THE UNIVERSITY OF MANCHESTER WITH A FOCUS ON LUMINESCENT SUPRAMOLECULES FOR APPLICATIONS IN DATA STORAGE. MY ACADEMIC AND RESEARCH BACKGROUND HAS PREPARED ME FOR THIS FIELD OF STUDY.

DURING MY UNDERGRADUATE SUMMER INTERNSHIP IN IISER BHOPAL, I EXPLORED INTER-ORGANELLE COMMUNICATION USING FLUORESCENCE PROBES TO UNDERSTAND THE INTERCONNECTEDNESS OF CELL ORGANELLES. THIS INTERNSHIP HELPED ME UNDERSTAND THE SIGNIFICANCE OF FLUORESCENCE PROBES IN BIOLOGICAL APPLICATIONS.

IN MY M.SC. PROJECT AT IIT KHARAGPUR, I FOCUSED ON SYNTHESIZING NANOPARTICLES AND THEIR APPLICATION IN PROHIBITING AMYLOID FORMATION. THIS PROJECT GAVE ME HANDS-ON EXPERIENCE IN NANOPARTICLE SYNTHESIS AND THEIR POTENTIAL APPLICATION IN CHEMISTRY.

I HAVE DONE MY M.SC SUMMER INTERNSHIP IN IISC BANGALORE ON POLYMER CHEMISTRY. THERE I LEARNED ABOUT SYNTHESIS OF FLUORESCENT BASED POLYMERS.

FURTHERMORE, DURING MY SUMMER INTERNSHIP IN IIT INDORE, I EXPLORED FLUORESCENCE-BASED CATION RECOGNITION SENSORS, WHICH BROADENED MY KNOWLEDGE OF FLUORESCENCE-BASED APPLICATIONS IN SENSORS.

ADDITIONALLY, I PARTICIPATED IN THE INTERNATIONAL ONLINE SUMMER INTERNSHIP 2021 AT OSAKA UNIVERSITY, JAPAN, WHERE I LEARNED ABOUT NMR SPECTROSCOPY AND ITS APPLICATIONS.

MOREOVER, MY SUMMER INTERNSHIP AT JNCASR UNDER SUBI JACOB GEORGE, INTRODUCED ME TO THE FASCINATING WORLD OF SUPRAMOLECULAR CHEMISTRY. THE INTERNSHIP HELPED ME UNDERSTAND THE IMPORTANCE OF NON-COVALENT BONDS IN THE FORMATION OF STRUCTURES AND PHENOMENA THAT ARE GREATER THAN THE SUM OF THEIR INDIVIDUAL COMPONENTS.

I AM EXCITED TO CONTINUE MY RESEARCH IN THE FIELD OF SUPRAMOLECULAR CHEMISTRY AND THEIR APPLICATIONS IN DATA STORAGE. LUMINESCENT SUPRAMOLECULES OFFER SEVERAL ADVANTAGES OVER TRADITIONAL DATA STORAGE MATERIALS. THESE SUPRAMOLECULES CAN POTENTIALLY STORE A LARGE AMOUNT OF DATA WITH HIGH DENSITY, INCREASED SECURITY, AND FASTER DATA TRANSFER RATES.

I BELIEVE THAT THE JOINT PH.D. PROGRAM IN IIT KHARAGPUR AND THE UNIVERSITY OF MANCHESTER WILL PROVIDE ME WITH THE NECESSARY SKILLS, KNOWLEDGE, AND OPPORTUNITIES TO ACHIEVE MY RESEARCH GOALS. I LOOK FORWARD TO CONTRIBUTING TO THE SCIENTIFIC COMMUNITY THROUGH MY RESEARCH AND MAKING A SIGNIFICANT IMPACT IN THE FIELD OF SUPRAMOLECULAR CHEMISTRY.