

To Professor **Saibal Gupta** and Doctor **Margherita Polacci**:

I would like to express my utmost interest in the PhD project entitled “Understanding Large Igneous Provinces through the Deccan Traps: implications for flood basalts origin, emplacement and climate impact”, which will be undertaken through the IITK-UoM Dual Award PhD Program. In line with this, I would like to concisely present in this letter my academic and research background, their relevance to my current research interest, my motivation for undertaking the said PhD project, and my long term plan.

Volcanism and fossil magmatic-hydrothermal systems in the form of ore deposit are very prominent in our country, Philippines. In fact, our province alone has a previously operating large-scale Cu-Au mine, and a host of one active and three potentially active volcanoes. My intimacy with these geologic features while growing up sparked my fascination and deep curiosity for volcanoes and ore deposits. This enduring interest and curiosity led me to acquire a BSc Geology degree under one of our government’s prestigious scholarship program. Subsequently, I was employed as a research associate at the University of the Philippines – National Institute of Geological Sciences (UP-NIGS), which is the center of excellence in geology in our country. During my employment as a research associate, I was also enrolled as a part-time MSc Geology student in the same institute.

The research work that I did at UP-NIGS, which eventually became my MSc thesis, was related with ore geology – one of the topics that I am very passionate about. The main objective was to constrain the characteristics and style of a gold prospect in order to provide theoretical concepts that would aid future exploration. To achieve it, I carried out intensive field mapping and sampling, performed petrography, and conducted various geochemical analyses such as fluid inclusion microthermometry, mineral chemistry (using EPMA), X-ray diffraction and stable isotope analyses. Most of these analyses were conducted in Japan under the student exchange program of the Japan Student Services Organization. I was successful in finishing my research work and MSc thesis, which I published in an ISI-indexed journal. This first ever publication of mine is one of my lifelong dreams and I am looking forward to publishing more high impact work.

Currently, after finishing my MSc degree, I decided to retract from ore geology and consider instead studying magmatism/volcanism for a doctoral degree because not only it is related with most ore-forming processes, it has also been one of my obsessions. In addition, the ever-evolving theories about volcano-magmatic processes and the emerging cutting edge techniques for precisely understanding their complexities significantly reinforced my idea of looking for a PhD project related with this area of study.

I've been looking for such a PhD opportunity for a year and a half now but to no avail partly due to the pandemic. I was lucky enough, however, to be informed by one of you (Dr. Margherita) about the opportunity of applying for this PhD project about Large Igneous Provinces (LIPs) under the IITK-UoM Dual Award PhD program. Seeing the details of the project, I strongly consider it as the perfect opportunity for me to further hone my research skill, acquire experience in using state of the art equipment, and learn from the leading experts of igneous petrology and geochemistry. I also consider it as my chance to contribute into the understanding of LIPs, particularly the aspects that relate to its emplacement and ancient climate catastrophes. I believe that the project is in the prime position to unravel these aspects considering the availability of some of the most advanced equipment (e.g., synchrotron-based XRT, EPMA and LA-ICP-MS) for studying mineralogy and melt inclusions. Furthermore, studying the Deccan Traps would be a very surreal and uplifting experience to me knowing that this is one of the most well-known geologic formations in the world and has been famously linked to dinosaur extinction.

Should I be selected for this dual PhD program and successfully obtain a doctoral degree, I really look forward to being one of the people who could strengthen the relationship between IITK and UoM through getting a teaching placement and/or continuously conducting research collaborations under both institutions. Moreover, extending the research collaboration to some of the Philippine universities where I have a connection with may also be a possibility.

In conclusion, I believe that I possess the research background, character, and long term goal that are perfectly suitable for the program and the project.

Sincerely,

Omar