**Indian Institute of Technology Delhi**

**School of Interdisciplinary Research (SIRe)**

**SIRe Project Number**

**2025-01-17**

(will be assigned by SIRe)

# Project Proposal for Ph.D.

| **Project Details** | |
|---|---|
| **Project Title** | An Automated and AI based microscopy for digital pathology |
| **Project Summary**<br><br>(Minimum 500 and maximum 2000 characters) | In the realm of cervical cancer detection, digital pathology and AI technologies represent a revolutionary paradigm shift. High-resolution imaging afforded by digital microscopy allows for meticulous examination of cervical tissue, enabling the identification of subtle cellular abnormalities indicative of cervical cancer. Augmented by AI algorithms, this process becomes exponentially more efficient, automating the analysis of vast amounts of data to aid pathologists in accurate diagnosis. This PhD position is dedicated to advancing AI techniques specifically tailored for cervical cancer screening, with the overarching goal of enhancing early detection rates and improving patient outcomes. By joining our research team, candidates will play a pivotal role in pioneering AI-driven digital pathology solutions that have the potential to transform cervical cancer care globally. |

**Ph.D. Supervisors**

| Role | Name of Faculty | Academic Unit in IITD/Institute/University | Email ID (Official) |
|---|---|---|---|
| **Supervisor 1** | Dr. Ravikrishnan Elangovan | Department of Biochemical Engg and Biotechnology | elangovan@dbeb.iitd.ac.in |
| **Supervisor 2** | Prof Sachin Kolte | Department of Pathology, Vardhman Mahavir Medical College and Safdarjung Hospital, | drsachinkolte@gmail.com |

**Project requirements (Student qualifications, experience required, etc)**
***The candidate will be shortlisted based on common shortlisting criteria decided by ScRC (SIRe)**

The prospective candidate for this Ph.D. position should ideally possess a background in Computer Science/Electronics/realted and demonstrate a strong track record in various aspects:

**Academics:** A solid academic foundation in Biotechnology or related fields is a prerequisite. The successful candidate should have excelled in coursework related to molecular biology, genetics, and biotechnological techniques.
**Research Experience:** We seek candidates who have actively engaged in research activities, preferably in areas relevant to molecular diagnostics, infectious diseases, or biotechnology-driven innovations. Previous research experience will be highly valued.
**Experience in Industry/Innovation:** While academic research is essential, candidates with exposure to the industry or innovation sector will have a distinct advantage. Practical experience in translating research into tangible solutions or products is desirable.

If you are a driven and highly motivated individual with a passion for biotechnology, a keen interest in addressing global health challenges, and a commitment to making a meaningful impact, we encourage you to apply. This Ph.D. opportunity offers a unique platform for research, innovation, and the advancement of scientific knowledge with real-world implications in modernizing cancer screening.

**Source of fellowship/funding**
(CSIR/UGC/DBT/ICMR/ICAR/NEET-PG/DST-INSPIRE/IRD/FITT Project details, if any)

Candidate with his/her own fellowship / Project fellowship

| **Role of Faculty Members involved:** | |
|---|---|
| **Supervisor-1** | Dr. Ravikrishnan Elangovan Lab: Dr. Ravi will be mentoring student in development of automated imaging platforms |
| **Supervisor -2** | Dr Sachin Kolte will be mentoring the student in pathology imaging and clinical validation of AI models |