



St Xavier's College (Autonomous)

5, Mahapalika Marg, Mumbai-400001

**Synthesis of gold nanoparticles and their in vitro delivery into cancer cells using electric field**

A dissertation submitted to St Xavier's College-  
Autonomous

For the partial fulfilment of the degree of Master of Science in Biotechnology

By

**Nihira Sanjay Deolikor**

MSc. (Biotechnology)

2019-2020

Under the guidance of

**Prof. Rochish Thaokar**

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Powai, Mumbai-400 076.

**POST GRADUATE DEPARTMENT OF BIOTECHNOLOGY**

St Xavier's College (Autonomous)

5, Mahapalika Marg, Mumbai -400001



**CERTIFICATE**

This is to certify that **Nihira Sanjay Deollikar**, student of MSc (Biotechnology) - Semester IV, at the Post Graduate Department of Biotechnology, St. Xavier's College (Autonomous) has submitted the dissertation work titled "**Synthesis of gold nanoparticles and their in vitro delivery into cancer cells using electric field**" for the partial fulfilment of the Master's degree in Science in Biotechnology, during the academic year 2019-2020.

**Date:**

**Place: Mumbai**

A handwritten signature in blue ink, appearing to read 'K. Gokarn', is written over a horizontal line.

**Dr. Karuna Gokarn**

**Head of the Department, PGDBT**

POST GRADUATE DEPARTMENT  
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### CERTIFICATE OF COMPLETION

This is to certify that Ms. Nihira Deollikar, student of MSc (Biotechnology), St. Xavier's College (Autonomous) has completed four months training/Research Project at the Electrohydrodynamics lab, (IIT Bombay) during the academic year 2019-2020. She has completed the dissertation work entitled "Synthesis of gold nanoparticles and their in vitro delivery into cancer cells using electric field" for the partial fulfilment of MSc. (Biotechnology) degree. She has been familiarized with the following techniques during this project:

- a) Synthesising spherical and anisotropic Gold nanoparticles
- b) Learning the basics of nanoparticle delivery when administered in conjunction with electroporation
- c) Also understood the interaction of nanoparticles with biological cells

This carefully written report represents the experiments and literature related to the same carried out by her during the period from 1 st December 2019 to 31 st March 2020.

I found Ms. Nihira Deollikar to be a sincere and hardworking student. Her overall conduct was good.

PI: Rochish Thakkar

Date: 20-06-2020

**Prof. Rochish Thakkar**  
Professor  
Department of Chemical Engineering  
Indian Institute of Technology, Bombay  
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