**Department of Electrical and Computer Engineering**
**North South University**

# Senior Project Design

# EEE/ETE 499

**Optical Pulling Force for Distinct Nanoparticle in a mixture of three nanoparticles.**

**Team Members:**

| Name: | ID: |
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**Fall 2020**

# Declaration

This is to declare that no part of this report or the project has been previously submitted elsewhere for the fulfillment of any other degree or program. Proper acknowledgement has been provided for any material that has been taken from previously published sources in the bibliography section of this report.

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# Approval

The Senior Design Project entitle "Optical Pulling Force for Distinct Nanoparticle in a mixture of three nanoparticles." by Md Rahul Mahmud and Md Masud Rana has been accepted as satisfactory and approved for partial fulfillment of the requirement of BS in ETE and BS in EEE degree program.

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# Acknowledgement

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# Abstract

Every aspect of this world has become advanced in last decade due to the development of the science and technology. In our experiment we have used three kinds of nanoparticle such as Dielectric, Plasmonic(PEC), Chiral. These nanoparticles are kept in a substrate which surface is plasmonic(PEC). We are trying to obtain remarkable pulling force. We have used lights such as angles that can obtain pulling force. We have checked from 400 nm to 1800 nm for getting better pulling forces. But in our experiment on a plasmonic substrate we don't obtain good amount of pulling force. Most of the time pulling force are missing. So we are trying to find the reason why we don't get optical pulling force. Our experiment will largely help in medical uses in future. If we can modify and implement beautifully than it can be used vastly in medical science. We can also use this force to increase the amount of electricity. So our experiment can help in our everyday life.