

# **NUMERICAL ANALYSIS OF FIXED SLIDER BEARING UNDER THIN FILM LUBRICATON**

A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of

**Bachelor of Technology**

**In**

**Mechanical Engineering**

**Submitted By**

**Anjali Kujur (1501105271)**

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**Guided By**

**Mr. Gaurab Kumar Ghosh**

**(Assistant Professor)**



**DEPARTMENT OF MECHANICAL ENGINEERING**

**INDIRA GANDHI INSTITUTE OF TECHNOLOGY SARANG 759146,**

**Odisha**

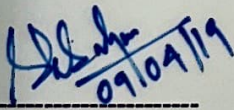
**2019**

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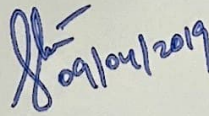


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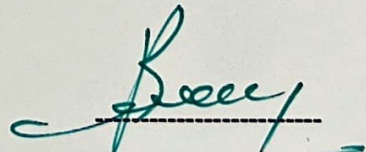
This is to certify that the thesis entitled “*Effect of Particle Size of SiC On The Mechanical Properties Of SiC Reinforced Aluminium 8011 Composites.*” submitted by **Manisha Dash, Binayak Dash, Pritish Nayak, Swarupananda Panda & Aswin Priyadarsan** bearing registration no. 1501105401,1501105388, 1501105409, 1501105422, and 1621105023 respectively to Indira Gandhi Institute Of Technology, Sarang for the award of Bachelor of Technology in **Metallurgical and Materials Engineering** during the academic year 2018-19 is a bonafide record of work/research carried out by him under my supervision. The content of this Report/dissertation, in the full or parts has not been submitted to any other institute or university for the award of any degree or diploma.

  
09/04/19

Supervisor

  
09/04/2019

Head of the Department



External Examiner


**INDIRA GANDHI INSTITUTE OF TECHNOLOGY, SARANG**

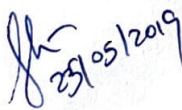


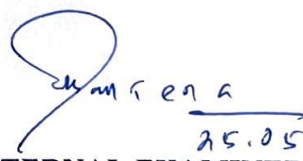
**CERTIFICATE**

This is to certify that the thesis entitled, "PROCESSING AND CHARACTERISATION OF Fe-35Mn BIODEGRADABLE MATERIALS" being submitted by PRIYADARSHINI NAYAK (1707105062) in partial fulfillment of the requirements for the award of the degree of Master of Technology in Specialization of Metallurgical and Material Engineering to the INDIRA GANDHI INSTITUTE OF TECHNOLOGY, during the year 2018-2019, is a bonafide record of research work carried out by her under my supervision.

The contents of this thesis, in full or part, have not been submitted to any other university or institution for the award of any degree.

  
22/05/19  
**GUIDE**

  
25/05/2019  
**HOD**

  
25.05.19  
**EXTERNAL EXAMINER**

**Mr. A.K. BISWAL**  
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MME department,  
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**Dr. S.C. PATNAIK**  
MME department  
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INDIRA GANDHI INSTITUTE OF TECHNOLOGY,  
SARANG

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION  
ENGINEERING



CERTIFICATE

This is to certify that the thesis titled “**PERFORMANCE ANALYSIS OF 5G-NR USING ADVANCED CHANNEL CODING TECHNIQUES**” submitted by **Ankita Mohapatra, Ameet Kumar Agarwal, Janmajay Pradhan, Nikita Mundu and Sobhagini Pandey** bearing registration numbers **1501105519, 1501105521, 1501105528, 1501105531 and 1501105544** respectively, to Indira Gandhi Institute of Technology, Sarang as a partial fulfilment for the Degree of Bachelor of Technology in Electronics and Telecommunication Engineering, under BPUT Rourkela, is a bonafide research work carried out by them in the Department of Electronics and Telecommunication Engineering under my supervision and guidance.

Project Guide

Head of Department

External Examiner

INDIRA GANDHI INSTITUTE OF TECHNOLOGY  
SARANG



DEPARTMENT  
of  
ELECTRONICS AND TELECOMMUNICATION ENGINEERING

**CERTIFICATE**

This is to certify that the project work entitled "Design and implementation of 256-bit symmetric key cryptography algorithm used in the data security with resistance to Brute-force and timing attacks written in VHDL code using Xilinx ISE 9.2i software" is bonafied work carried out by ANWESHA DAS bearing Regd. No. 1707105127 under the guidance of Mr. Paresh Kumar Pasayat, Asst. Professor which is in partial fulfilment of the requirements for the award of M.Tech. Degree in Electronics and Telecommunication Engineering from Indira Gandhi Institute of Technology, Sarang during the academic year 2017-2019.

*PKP*  
*17/05/2019*  
Mr. Paresh Kumar Pasayat

(Guide)

*Debajyoti Mishra*  
*17/5/19*  
Dr. Debajyoti Mishra

(M-tech Co-ordinator)

*Urmila Bhanja*  
*17.5.2019*  
Dr. Urmila Bhanja

(Head of the Dept.)

*External Examiner*  
*17.05*  
External Examiner



## CERTIFICATE

This is to certify that the Dissertation Report entitled, "Removal of Chromium(VI) from Mine Waste Water by using Activated Carbon prepared from green coconut shell" submitted by "Ms.Piu Chakraborty(Roll No. MT/CH/03 and Regd. No. 1707105092 )" to Indira Gandhi Institute of Technology, Sarang, Odisha, is a record of bonafides Project work carried out by her under our supervision and guidance and is worthy of consideration for the award of the degree of Master of Technology in Chemical Engineering with Specialization in "Chemical Engineering" of the Institute.

*D*  
16/5/2019

Dr. Dipa Das

Guided by  
(Asst. Professor)  
IGIT Sarang

*Asahoo*  
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Dr.(Prof.)Abanti Sahoo

(NIT Rourkela)

*S. Mohanta*  
16/05/2019

Dr. S. Mohanta

(Head of Department)  
IGIT Sarang

# CERTIFICATE

This is to certify that the dissertation Report entitled, "Effects of Additives in Pelletization of Hematite Fines Concentrate" submitted by "Mrs. SMRUTI SMITA TRIPATHY(Roll No. MT/CH/04 and Regd. No. 1707105152 )" to Indira Gandhi Institute of Technology, Sarang, Odisha, is a bona fides record of Project work carried out by her under our supervision and guidance. This is worthy of consideration for the award of the degree of Master of Technology in Chemical Engineering with Specialization in "Chemical Engineering" of the Institute.

P. Prusty  
15/05/2019

CO-GUIDE

K. S. Sahoo  
16/05/2019

GUIDE

A. Sahoo  
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EXTERNAL EXPERT

S. Mahanta  
16/05/2019

HEAD OF THE DEPARTMENT  
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DATE:

## CERTIFICATE


This is to certify that the Dissertation Report entitled, "A Comparison Study of Basic Pellets in concern to their Feed Characteristics" submitted by "Ms. Arpita Sahoo (Roll No. MT/CH/01 and Regd No.- 1707105077 )" to Indira Gandhi Institute of Technology, Sarang, Odisha, is a record of bona fides Project work carried out by her under our supervision and guidance and is worthy of consideration for the award of the degree of Master of Technology in Chemical Engineering with Specialization in "Chemical Engineering" of the Institute.

  
16/05/2019

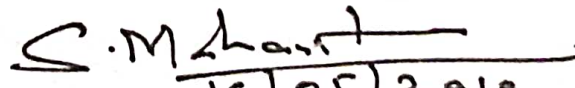
Dr. Kashinath Barik

  
15/05/19

Mrs. Pallishree Prusti

  
16.5.19

Dr.(Prof.) Abanti Sahoo

  
16/05/2019

Head of the Department

Chemical Engineering





## CERTIFICATE

This is to certified that the seminar report on “Mechanical Properties of Luffa Fibre and Jute Reinforced Epoxy Polymer with Graphene Nano-Particles Hybrid Composites” is a bonafied record of the seminar delivered by “SUBHAKANTA NAYAK”, Regd No.- 1707105106, Roll No.- MT/MSD/10 under my supervision and guidance in partial fulfillment of the requirement for the award of the degree in Master in technology (M.tech) in Mechanical Engineering from **INDIRA GANDHI INSTITUTE OF TECHNOLOGY, SARANG**, for the year 2017-2018.

**Guided By:**

Asst. Prof. Mr. Gaurab ku Ghosh

**Co-ordinated By:**

Asst. Prof. Mr. N.C. Nayak

---

**Head Of The Dept:**

Prof.(Dr.) B. D. Sahu

19/7/19

Examiner:

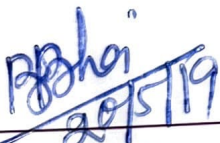
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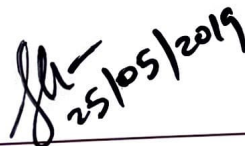


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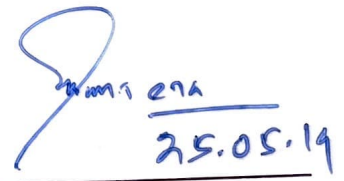
This is to certify that the thesis entitled "*A Study on Production of Fe-Ni and Fe-Mn from Manganese nodules*" submitted by "SNIGDHA PRIYADARSHINI" bearing Regd no.-1707105043 to Indira Gandhi Institute of Technology, Sarang for the award of **Master of Technology in Metallurgical and Materials Engineering** during the academic year **2017-2019** is a bonafide record of research carried out by him under my supervision. The content of this dissertation in full or parts has not been submitted to any other institute or university for the award of any degree or diploma.

  
20/5/19

SUPERVISOR  
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Chief Scientist  
Dept. of Advanced  
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25/05/2019

HEAD OF THE DEPARTMENT  
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Dept. of Metallurgical  
and Materials Engg.  
IGIT, Sarang

  
25.05.19

EXTERNAL EXAMINER

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## CERTIFICATE

This is to certify that the thesis entitled “**PROCESSING OF ODS STEEL USING  $Y_2O_3$  AND Y-Ti-O COMPLEX DISPERSOIDS BY MECHANICAL MILLING**” submitted by “**KUMAR GOURAV PATRA**” bearing Regd no.-**1707105032** to Indira Gandhi Institute of Technology, Sarang for the award of **Master of Technology in Industrial Metallurgy** during the academic year **2017-2019** is a bonafide record of research carried out by him under my supervision. The content of this dissertation in full or parts has not been submitted to any other institute or university for the award of any degree or diploma.

  
24/05/2019  
24.05.19

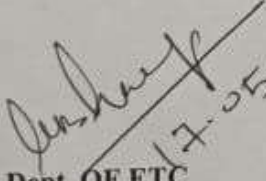
<b>GUIDE</b> Mr. Amulya Bihari Pattnaik Assistant Professor Dept. of Metallurgical and Materials Engg IGIT, Sarang	<b>Co- GUIDE</b> Mr. Shubhra Bajpai Scientist Advanced Material Technology IMMT, Bhubaneswar	<b>HEAD OF THE DEPARTMENT</b> Prof. (Dr.) S C Pattnaik Dept. of Metallurgical and Materials Engg. IGIT, Sarang	<b>EXTERNAL EXAMINER</b>
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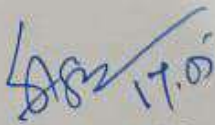


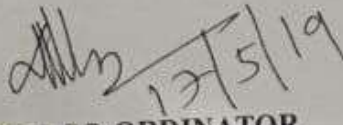
Department of Electronics & Telecommunication Engineering  
INDIRA GANDHI INSTITUTE OF TECHNOLOGY, SARANG

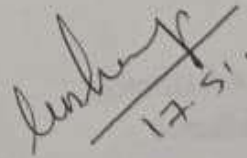
## CERTIFICATE

*This is to certify that the thesis entitled "Spatial multiplexing in 5G new radio" being submitted by Ms. Somalisha Satapathy, to the Indira Gandhi Institute of technology, Sarang for the award of degree of Master of Technology in Electronics and Telecommunication Engineering with specialization in "Wireless Communication Technology", under IGIT, sarang, is a bonafide research work carried out by her in the Department of Electronics and Telecommunication Engineering, under my supervision and guidance.*

  
17-05-19  
HOD Dept. OF ETC  
EXAMINER IGIT, SARANG

  
17.05  
EXTRENAL

  
17/5/19  
M.TECH CO-ORDINATOR

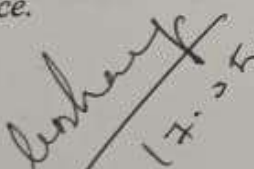
  
17-5-19  
SUPERVISOR



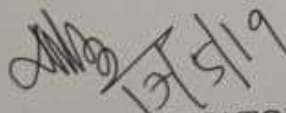
Department of Electronics & Telecommunication Engineering

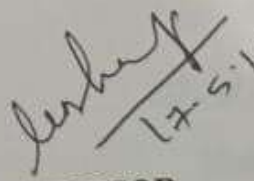
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This is to certify that the thesis entitled "Synchronization and detection in 5G new radio using PRACH" being submitted by Ms. Shatabdi Choudhury, to the Indira Gandhi Institute of technology ,Sarang for the award of degree of Master of Technology in Electronics and Telecommunication Engineering with specialization in "Electronics and Telecommunication Engineering", under IGIT,sarang, is a bonafide research work carried out by her in the Department of Electronics and Telecommunication Engineering, under my supervision and guidance.

  
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