

List of Ph.D. & M. Tech Theses

Accession No.: T00932-T01014

(New Additions in 2022)

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PhD Theses		
Discipline	Total	
Biological Engineering	4	
Chemical Engineering	4	
Chemistry	5	
Civil Engineering	5	
Cognitive Science	1	
Computer Science and Engineering	1	
Earth Science	4	
Electrical Engineering	1	
Humanities and Social Science	1	
Materials Engineering	3	
Mathematics	1	
Mechanical Engineering	1	
Physics	8	
Total	39	

M.Tech Theses		
Discipline	Total	
Biological Engineering	4	
Chemical Engineering	2	
Civil Engineering	10	
Computer Science and Engineering	5	
Earth Science	2	
Electrical Engineering	9	
Materials Engineering	6	
Mechanical Engineering	6	
Total	44	

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### LIST OF PHD THESES

### **Biological Engineering**

1 Title :  $\alpha$ -synuclein fibrillogenesis inhibitors and impact of charge neutralizing lysine

post-translational modifications on  $\alpha$ -synuclein and tau derived peptide

aggregation

Author : Gadhavi, Joshna Dharmendrabhai

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 612.8 GAD Acc. No. : T00948

2 Title : Studying endocytic uptake of nanostructures and pathogenic protein

aggregates in model neurons

Author: Hivare, Pravin

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 570 HIV Acc. No. : T00956

3 Title : Design, synthesis and characterisation of organic fluorophores for

visualization of cellular organelles

Author : Mukherjee, Tarushyam

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 571.65 MUK Acc. No. : T00957

4 Title : Identification and screening of G-quadruplex structures in DNA and long non-

coding RNAs

Author : Desai, Nakshi Nayan

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 572.85 DES Acc. No. : T00958

# **Chemical Engineering**

1 Title : Scalable synthesis of two dimensional nanosheets from magnesium diboride:

a new class of nanomaterials for solid-propellants and hydrogen storage

Author : Gunda, Harini

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 665 GUN Acc. No. : T00932 2 Title : Role of rheology on the hydraulic conveying of slurries of particulate solids

through pipelines

Author: Prasad, Vighnesh

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 621.867 PRA

Acc. No. : T00933

3 Title : Estimation and control strategies for smart water grids: a cyber-physical

systems approach

Author : Kartik, Mankad Jaivik

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 621.319 KAR Acc. No. : T00937

4 Title : Enhanced mechanical properties of chitosan hydrogels: rheology, 3d

extrusion printing, and applications

Author : Marapureddy, Geetha

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 660 MAR Acc. No. : T00955

### Chemistry

1 Title : Membrane-targeting methacrylamide-based antibiotic polymers to combat

drug-resistant bacteria: synthesis, characterization, and investigation of

biological properties

Author : Tyagi, Anju

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 615.329 TYA Acc. No. : T00939

2 Title : Preparation of bulk and thin-film conducting metal oxides electrodes and

their electrochemical properties

Author : Vyas, Divya

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 530.4175 VYA

Acc. No. : T00940

3 Title : Quinoline-based small molecules as ATM kinase inhibitors: design, synthesis

and applications

Author: Srimadhavi, R.

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 572.6 SRI Acc. No. : T00946 4 Title : Synthesis and photoinduced chromic studies of a new class of alkylated

unsaturated carbonyl compounds and their derivatives

Author : Duppalapudi, Venkata Mani Padmaja

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 547 DUP Acc. No. : T00949

5 Title : Developing methods for controlled spatial ordering of anisotropic gold

nanoparticles for enhanced spectroscopy at the nanogaps

Author : Kar, Ashish

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 540 KAR Acc. No. : T00954

# Civil Engineering

1 Title : Uncertainty quantification and design optimization of steel plate shear walls

Author : Khan, Nasar Ahmad

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 624.1762 KHA

Acc. No. : T00936

2 Title : Development of hydrologic outlook at short to sub-seasonal time scales for

India

Author : Tiwari, Amar Deep

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 627.0954 TIW

Acc. No. : T00943

3 Title : 3D CFD modeling of the open channel junction flow on fixed and mobile beds

Author : Pandey, Abhishek Kumar

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 624 PAN Acc. No. : T00968

4 Title : Predictive modelling for the occurrence, prevalence, fate and transport of

contaminants in the aquatic system

Author : Singh, Ashwin

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 624 SIN Acc. No. : T00969

5 Title : Urban heat island in India: drivers, variations, and interactions

Author : Kumar, Rahul

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 624.1 KUM Acc. No. : T00970

### **Cognitive Science**

1 Title : John Henryism in the Indian context

Author : Gopal, Anvita

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 305.0954 GOP

Acc. No. : T00944

### **Computer Science and Engineering**

1 Title : On coresets for regularized and fair machine learning problems

Author : Chhaya, Rachit

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 005 CHH Acc. No. : T00950

#### **Earth Sciences**

1 Title : Impacts of Irrigation on hydroclimatic extremes in India

Author : Ambika, Anukesh Krishnankutty

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 627.50954 AMB

Acc. No. : T00960

2 Title : Non-redfieldian C:N:P ratios in the inorganic and organic pools of the

northern Indian Ocean

Author: Sahoo, Deepika

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 551 SAH Acc. No. : T00963

3 Title : Quaternary ventilation of the Indian Ocean deep basins, foraminiferal

isotopic and abundance approach

Author: Bharti, Nisha

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 551.461824 BHA

Acc. No. : T00964

4 Title : Insights into the geological history of Mars through impact craters

Author : Harish

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 551.7 HAR Acc. No. : T00965

### **Electrical Engineering**

1 Title : Design, modelling and control of novel hybrid flux motor

Author: Balaganesh B.

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 621.46 BAL Acc. No. : T00941

#### **Humanities and Social Sciences**

1 Title : Nutrition promotion among indian children and youth: insights from three

theory-driven studies

Author : Shah, Ankita Rameshkumar

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 613.2083 SHA

Acc. No. : T00934

# **Material Science and Engineering**

1 Title : Development and analysis of friction stir channeling process using

experimental tools

Author : Pandya, Sheetal Rameshchandra

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 671.52 PAN Acc. No. : T00935

2 Title : Quasi-coupled solidification and heat transfer-material flow modelling for

directed energy deposition process of AI-0.5Sc-0.5SI alloy

Author : Singh, Amit Kumar

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 621.4022 SIN

Acc. No. : T00938

3 Title : A bicrystal-template based approach to study grain boundaries

Author : Dish, Nilabh

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 620.11299 DIS

Acc. No. : T00947

#### **Mathematics**

1 Title : Koshliakov zeta functions, squares of odd zeta val ues, sum-of-tails identities,

and mock theta func tions

Author : Gupta, Rajat

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 515.56 GUP Acc. No. : T00959

# **Mechanical Engineering**

1 Title : Intermittent feedback control theory & its applications to human postural

control

Author: Dash, Ranjita

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 629. 8312 DAS

Acc. No. : T00945

### **Physics**

1 Title : Some novel studies of black holes in general relativity and modified theories

Author: Mishra, Akash K.

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 530.11 MIS Acc. No. : T00942

2 Title : Viscous dark matter and its astrophysical and cosmological signatures

Author : Mishra, Arvind Kumar

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2020

Call No. : 523.1126 MIS

Acc. No. : T00951

3 Title : Dynamics of self-assembly in silicon-based nanostructures at surfaces and

interfaces

Author : Utsav

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 537.622 UTS Acc. No. : T00952

4 Title : Aspects of beyond the standard model higgs phenomenology

Author : Sarkar, Agnivo

Publisher: Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 539.721 SAR Acc. No. : T00953 5 Title : Various manifestations of accretion onto stellar-mass black holes

Author : Rout, Sandeep Kumar

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 520 ROU Acc. No. : T00961

6 Title : Experimental investigation of biomolecules under impact induced shock

Author : Singh, Surendra Vikram

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 550 SIN Acc. No. : T00962

7 Title : Magnetic field and electric current in the solar atmosphere

Author : Nayak, Sushree Sangeeta

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 523.72 NAY Acc. No. : T00966

8 Title : Probing new physics with cosmological observations

Author : Parashari, Priyank

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2021

Call No. : 530 PAR Acc. No. : T00967

LIST OF M. TECH THESES
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### LIST OF M. TECH THESES

# **Biological Engineering**

1 Title : Extended invitro sudies on the functions of CGGBP1in G4-quadruplex

dynamics

Author : Mudgal, Akanksha

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 620.8 MUG Acc. No. : T00983

2 Title : Ultrafast Doppler ultrasound for assessing blood perfusion in the foot: A

feasibility study

Author: Nair, Hari S.

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 620.2 NAI Acc. No. : T00984

3 Title : Hypoxia modulates cellular endocytic pathways and organelles with

enhanced cell migration and 3D cell invasion in cancerous cells

Author : Neveena A, Hema

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 616 NAV Acc. No. : T00985

4 Title : Studies on ROS generation via sono-sensitization of a porphyrin derivative

Author : Patel, Vishwa

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 620.8 PAT Acc. No. : T00986

# **Chemical Engineering**

1 Title : Coarse grained modeling and sequence analysis of the nuclear pore complex

Author : Bhardwaj, Pratyasha

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 665 BHA Acc. No. : T00978

2 Title : Graphene oxide - carbamoylated chitosan hydrogels with tunable mechanical

properties for biological and printing applications

Author : Gupta, Ratnika

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 610.28 GUP Acc. No. : T00987

# Civil Engineering

1 Title : Sloshing in conventionally-founded and base isolated liquid retaining tanks

subjected to earthquake induced shaking

Author : Pandole, Abhishek

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 624.1762 PAN

Acc. No. : T00971

2 Title : Shear modulus, liquefaction susceptibility and rebound response of

micaceous sand under different dynamic loading conditions

Author : Manzoor, Bazela

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 624 MAN Acc. No. : T00979

3 Title : Suitability of bentonite treated pond ash for ash dyke construction

Author : Agarwal, Aditi

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 624 AGA Acc. No. : T00988

4 Title : Projected increase in hydropower potential in Indian river basins driven by

the rise in high-flow events

Author : Chuphal, Dipesh Singh

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 624 CHU Acc. No. : T00989

5 Title : Effect of coarse content on monotonic, dynamic and liquefaction response of

pond ash

Author : Luhar, Hiral Rajendrabhai

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 624 LUH Acc. No. : T00990

6 Title : Analytical formulation of slab behavior at fire considering the effect of tensile

membrane action

Author : Singh, Prashant Kumar

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 624.1 SIN Acc. No. : T00991 7 Title : On the feasibility of GPR assessment for non-contact landmine detection

Author: Garg, Ushma

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 623 GAR Acc. No. : T00992

8 Title : Analysis of RC shear wall subjected to thermal exposure

Author : Panara, Vimal Ganeshbhai

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 624.1762 PAN

Acc. No. : T00993

9 Title : Stability analysis of low-width back-to-back geosynthetic reinforced soil wall

Author : Siddiqui, MD Nayim

Publisher : Gandhinagar, Indian Institute of Technology Gandhinagar, 2022

Call No. : 624.18341 SID

Acc. No. : T01013

10 Title : Detailed combustion modeling of polyethylene used in ACP

Author : Kumar, Sumit

Publisher : Gandhinagar, Indian Institute of Technology Gandhinagar, 2022

Call No. : 624 KUM Acc. No. : T01014

### **Computer Science and Engineering**

1 Title : Enhancing the performance of self-supervised models for seizure detection

Author: Das, Sudip

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 004 DAS Acc. No. : T00980

2 Title : Disease detection using machine learning and deep learning approach

Author : Agrawal, Aarchi

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 006.31 AGR Acc. No. : T00994

3 Title : HDR image reconstruction and low-dose dynamic CTP denoising

Author: Athulkumar R.

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 006.37 ATH Acc. No. : T00995

4 Title : Reconstruction and segmentation using explicit and implicit neural

representation

Author: Shanly, K. S. Ashin

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 004 SHA Acc. No. : T00996

5 Title : Problems in computational social choice on restricted domains

Author : Sonar, Chinmay

Publisher : Gandhinagar, Indian Institute of Technology Gandhinagar, 2022

Call No. : 004.03 SON Acc. No. : T01011

#### **Earth Sciences**

1 Title : Mid to late holocene paleo-hydrological reconstruction over Indus Valley

civilization area using TraCE-21ka simulations

Author : Rajeshbhai, Hiren Solanki

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 550 RAJ Acc. No. : T00997

2 Title : Tectono-geomorphic imprints on landscape evolution in the himalayan

interior

Author : Kalabhai, Makwana Gunjankumar

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 551.8 KAL Acc. No. : T00981

### **Electrical Engineering**

1 Title : Input data order dependency of approximate multipliers in error resilient

applications

Author : Pidagannavar, Mallikarjun Y.

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 621.381 PID Acc. No. : T00972

2 Title : Deep neural networks for crater detection on lunar surface

Author : Prateek, K.

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 006.32 PRA Acc. No. : T00973

3 Title : SRAM based in memory computing for energy efficient hardware for AI

Author : Biswas, Aditya

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 621.39 BIS Acc. No. : T00998 4 Title : Multiclass crater classification using fully convolutional residual dense

network

Author : Singh, Amrita

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 621.3 SIN Acc. No. : T00999

5 Title : Robust nonlinear self interference cancellation in in-brand full duplex

communication system

Author : Sharma, Animesh

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 621.382 SHA

Acc. No. : T01000

6 Title : Comparative study of BLDC motor speed control techniques

Author : Reshi, Javaid Ahmad

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 670 RES Acc. No. : T01001

7 Title : Design and analysis of tubular linear PMSM for low-speed low-power

application

Author : Singh, Kaustuv

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 621.34 SIN Acc. No. : T01002

8 Title : A novel power converter for combined on-board EV charging and powertrain

Author : Dutta, Sanjit

Publisher : Gandhinagar, Indian Institute of Technology Gandhinagar, 2022

Call No. : 621.38 DUT Acc. No. : T01010

9 Title : Super resolution of lunar satellite images on computationally resource-

limited platforms

Author : Prateek, Chennuri

Publisher : Gandhinagar, Indian Institute of Technology Gandhinagar, 2021

Call No. : 629.46 PRA Acc. No. : T01012

# **Material Engineering**

1 Title : Finite elements analysis on deformational behavior of bobbins in the textile

industry

Author: Gond, Shubham

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 620.11 GON Acc. No. : T00977 2 Title : Ordering in Copper-Gallium alloys

Author : Chhotray, Abhijit

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 673.3 CHH Acc. No. : T01003

3 Title : Microstructure analysis of high-pressure torsion deformed Zr-2.5 Nb and Zr-

2.5 Nb-0.5 Ni alloys

Author : Gente, Anjani

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 620.11 GEN Acc. No. : T01004

4 Title : Fabrication and characterization of mono and hybrid composites using

friction stir processing with soda-lime glass and polymer reinforcements

Author: Mohanty, Ankita

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 671.73 MOH Acc. No. : T01005

5 Title : Synthesis and application of metal organic frameworks grown on self

sacrificial metal substrates

Author : Keerthy V.

Publisher : Gandhinagar, Indian Institute of Technology Gandhinagar, 2022

Call No. : 547.05 KEE Acc. No. : T01006

6 Title : Developing non-stoichiometric crystalline and amorphous TiO2 for dye

degradation applications

Author : Roy, Remiya

Publisher : Gandhinagar, Indian Institute of Technology Gandhinagar, 2022

Call No. : 541.35 ROY Acc. No. : T01007

# **Mechanical Engineering**

1 Title : Design and fabrication of Sievert apparatus and investigation of volumetric

hydrogen storage properties of boron nitride based nanomaterials

Author : Gour, Anshul

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 621 GOU Acc. No. : T00974

2 Title : Role of topological gradients on effective properties in cellular solids

Author : Srivastava, Utkarsh

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 620.11 SRI Acc. No. : T00975 3 Title : Effective elastic properties of orthotropic tetrakaidecahedral open cell foams

Author : Sahu, Shivam

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 621 SAH Acc. No. : T00976

4 Title : Electrophoretic trajectories in viscoelastic fluids

Author : Borthakur, Rajnandan

Publisher : Gandhinagar: Indian Institute of Technology Gandhinagar, 2022

Call No. : 621.81 BOR Acc. No. : T00982

5 Title : Noise generation due to airfoil-vortex interaction

Author : Sarkar, Abishek

Publisher : Gandhinagar, Indian Institute of Technology Gandhinagar, 2022

Call No. : 620.23 SAR Acc. No. : T01008

6 Title : Energetics of Lithium extraction from brines through electrochemical

methods

Author : Deka, Akangsha

Publisher : Gandhinagar, Indian Institute of Technology Gandhinagar, 2020

Call No. : 660.29 DEK Acc. No. : T01009