

**Sakthi Polytechnic college, Sakthi Nagar**  
**Department of Metallurgy**  
**Academic Year 2023-2024**

**Report on Value Added Course: NDT Level II Certification**

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The Department of Metallurgy at Sakthi Polytechnic College organized an inaugural function for the Value-Added Course on NDT Level II Certification for final year metallurgy on **21st August 2023** at **11:00 AM** in the M5A Hall. The event was a significant milestone for the department, aiming to enhance the skills and employability of the students in the field of Non-Destructive Testing (NDT).

The certification program is a collaboration between the **Department of Metallurgy** and **Queen India Engineering Services, Erode**.

The function commenced with the **Tamil Thai Vazhthu**, setting a respectful and auspicious tone for the event.

**Mr. M. Senthilkumar, M.E., MISTE.**, Head of the Department of Metallurgy, delivered the **Welcome Address**, expressing his gratitude to the attendees and highlighting the importance of NDT in the current industrial scenario.

Following the welcome address, **Dr. N. Thangavelu, M.E., Ph.D., MISTE.**, Principal of Sakthi Polytechnic College, gave the **Presidential Address**. He emphasized the college's commitment to providing quality education and the significance of such value-added courses in bridging the gap between academic knowledge and industry requirements.

The highlight of the event was the **Guest Lecture** by **Mr. R. Manikandan, M.E.**, Managing Director of Queen India NDT Institute (Engineering Services), Erode. Mr. Manikandan shared his extensive knowledge and experience in the field of NDT, providing valuable insights into the latest techniques and industry practices. His lecture was both informative and inspiring, encouraging students to pursue excellence in their NDT training.

The event concluded with a heartfelt **Vote of Thanks** by **Selvan R. Ajith**, a third-year Metallurgy student. He expressed his appreciation to all the dignitaries, faculty members, and students for their participation and support in making the event a success.

The inaugural function ended with the **National Anthem**, instilling a sense of pride and unity among the attendees.

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### **Impact of NDT in Various Industries**

Non-Destructive Testing (NDT) plays a crucial role in ensuring the safety, reliability, and integrity of materials and structures across various industries. In the **aerospace industry**, NDT is used to inspect aircraft components for defects without causing damage, ensuring passenger safety.

In the **automotive industry**, it helps in the quality control of parts and assemblies. The **oil and gas industry** relies on NDT to inspect pipelines and storage tanks, preventing leaks and ensuring environmental safety. In the **construction industry**, NDT is used to evaluate the integrity of buildings and infrastructure, ensuring they meet safety standards.

### **Job Opportunities and Value of NDT Level II Certification**

Obtaining an NDT Level II Certification opens numerous job opportunities in various sectors. Certified professionals can work as NDT technicians, quality control inspectors, and maintenance engineers in industries such as aerospace, automotive, oil and gas, power generation, and construction. The certification is highly valued as it demonstrates a professional's ability to perform and interpret NDT results accurately, ensuring the safety and reliability of critical components and structures. This certification not only enhances employability but also provides a pathway for career advancement in the field of NDT.

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## Modules Covered During the Program

The NDT Level II Certification training program covers the following modules:

1. **Liquid Penetrant Testing (LPT)**: Techniques for detecting surface-breaking defects in non-porous materials.
2. **Magnetic Particle Testing (MPT)**: Methods for identifying surface and near-surface discontinuities in ferromagnetic materials.
3. **Radiographic Testing (RPT)**: Use of X-rays or gamma rays to view the internal structure of a component.
4. **Visual Inspection**: Techniques for examining materials and components for visible defects.

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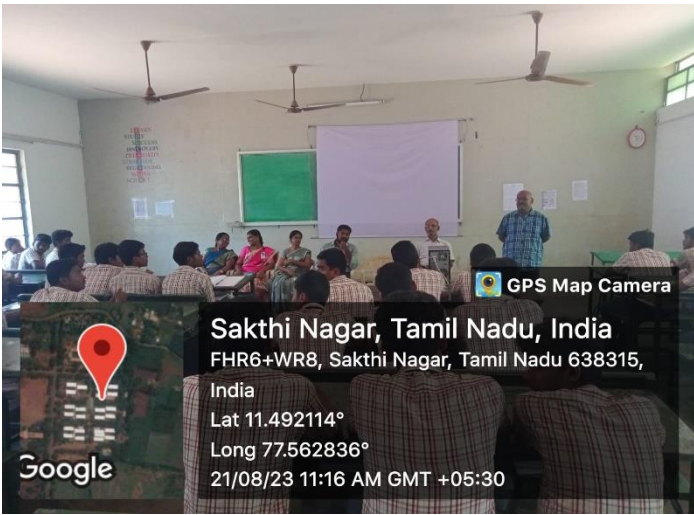
Additionally, **61 final year students** were awarded the **NDT Level II Certification** as per **ASNT Document SNT-TC-1A, 2020 Edition**, marking a significant achievement in their academic and professional journey.

The NDT Level II Certification training program is set to commence following the inaugural function, promising to equip students with the necessary skills and knowledge to excel in the field of Non-Destructive Testing. This program is coordinated by **Mr. P. Govindarasu** and **Mr. J. Yuvaraja**, who have ensured a comprehensive and well-structured training schedule.

This report encapsulates the essence of the inaugural function and the enthusiasm of the Department of Metallurgy in fostering industry-relevant skills among its students.

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## PHOTOS



## SAMPLE CERTIFICATION

File No: QIES/SPC/002  
Certificate No: 22ISM1676VT

**QUEEN INDIA**  
ENGINEERING SERVICES

8/555M, 3<sup>rd</sup> floor, Baby avenue, Old petrolbunk road, Lakshminagar, Bhavani-638316, Erode (Dt).

E-mail: info@queenindiaes.com  
Cont. No: +91 7373647070  
www.queenindiaes.com

**NON-DESTRUCTIVE TESTING CERTIFICATION**

This is to certify Mr. **HARIKARAN.S** of M/S **Sakthi Polytechnic College, Sakthi Nagar** has demonstrated his ability successfully in both written and practical examinations as per QIES/WP/001 with reference "ASNT" document SNT-TC-1A, 2020 Edition in the following discipline and level shown below.

Qualification: **Diploma in Metallurgy**


Method/LEVEL: **Visual Testing (VT) / LEVEL II**

Training Hours: **40 Hrs.**

Visual Acuity/ Color Vision: **J1/NORMAL**

Certification Issue Date: **28.03.2024**

Certification Valid up to: **27.03.2029**






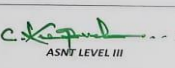
*Examinee's Signature*

Examination	Marks Obtained (%)	Pass/Fail
General	97.50	Pass
Specific	100.00	Pass
Practical	90.00	Pass
Composite Grade	95.83	Pass

1<sup>st</sup> Renewal

2<sup>nd</sup> Renewal

3<sup>rd</sup> Renewal

File No: QIES/SPC/002  
Certificate No: 22ISM1676PT

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Qualification: **Diploma in Metallurgy**


Method/LEVEL: **Penetrant Testing (PT) / LEVEL II**

Training Hours: **40 Hrs.**

Visual Acuity/ Color Vision: **J1/NORMAL**

Certification Issue Date: **28.03.2024**

Certification Valid up to: **27.03.2029**



*Examinee's Signature*


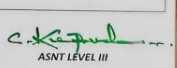
Examination	Marks Obtained (%)	Pass/Fail
General	92.50	Pass
Specific	100.00	Pass
Practical	91.00	Pass
Composite Grade	94.50	Pass

1<sup>st</sup> Renewal

2<sup>nd</sup> Renewal

3<sup>rd</sup> Renewal



File No: QIES/SPC/002  
Certificate No: 22ISM1676UT

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Qualification: **Diploma in Metallurgy**

Method/LEVEL: **Ultrasonic Testing (UT) / LEVEL II**

Training Hours: **80 Hrs.**

Visual Acuity/ Color Vision: **J1/NORMAL**

Certification Issue Date: **28.03.2024**

Certification Valid up to: **27.03.2029**



*Examinee's Signature*

Examination	Marks Obtained (%)	Pass/Fail
General	95.00	Pass
Specific	100.00	Pass
Practical	90.00	Pass
Composite Grade	95.00	Pass

1<sup>st</sup> Renewal

2<sup>nd</sup> Renewal

3<sup>rd</sup> Renewal






File No: QIES/SPC/002  
Certificate No: 22ISM1676MT

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Qualification: **Diploma in Metallurgy**


Method/LEVEL: **Magnetic Particle Testing (MT) / LEVEL II**

Training Hours: **40 Hrs.**

Visual Acuity/ Color Vision: **J1/NORMAL**

Certification Issue Date: **28.03.2024**

Certification Valid up to: **27.03.2029**






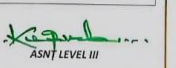
*Examinee's Signature*

Examination	Marks Obtained (%)	Pass/Fail
General	82.50	Pass
Specific	85.00	Pass
Practical	89.00	Pass
Composite Grade	85.50	Pass

1<sup>st</sup> Renewal


2<sup>nd</sup> Renewal

3<sup>rd</sup> Renewal

File No: QIES/SPC/002  
Certificate No: 22ISM1676R1

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Qualification: **Diploma in Mechanical Engineering**  
Method/LEVEL: **Radiographic Film Interpretation (RFI) / LEVEL II**  
Training Hours: **80 Hrs.**  
Visual Acuity/ Color Vision: **J1/NORMAL**  
Certification Issue Date: **28.03.2024**  
Certification Valid up to: **27.03.2029**




*Examinee's Signature*

Examination	Marks Obtained (%)	Pass/Fail
General	100.00	Pass
Specific	95.00	Pass
Practical	90.00	Pass
Composite Grade	95.00	Pass

1<sup>st</sup> Renewal      2<sup>nd</sup> Renewal      3<sup>rd</sup> Renewal


*P. Govindarasu*  
Course Director

*C. K. Govindarasu*  
ASNT LEVEL III

File No: QIES/SPC/002  
Certificate No: 22ISM1676R1

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Qualification: **Diploma in Metallurgy**  
Method/LEVEL: **Radiography Testing (RT) / LEVEL II**  
Training Hours: **80 Hrs.**  
Visual Acuity/ Color Vision: **J1/NORMAL**  
Certification Issue Date: **28.03.2024**  
Certification Valid up to: **27.03.2029**





*Examinee's Signature*

Examination	Marks Obtained (%)	Pass/Fail
General	90.00	Pass
Specific	80.00	Pass
Practical	89.00	Pass
Composite Grade	86.33	Pass

1<sup>st</sup> Renewal      2<sup>nd</sup> Renewal      3<sup>rd</sup> Renewal

*P. Govindarasu*  
Course Director

*C. K. Govindarasu*  
ASNT LEVEL III

## **Sakthi Polytechnic college, Sakthi Nagar - 638315**

### **Department of Metallurgy**

#### **Naan Mudhalvan - Industry 4.0 scheme**

The Naan Mudhalvan initiative is a significant upskilling platform aimed at enhancing the skills of students in Tamil Nadu, including those at Sakthi Polytechnic College. This scheme focuses on bridging the gap between academic knowledge and industry requirements, particularly in areas like Industry 4.0 and IoT.

#### Overview of Naan Mudhalvan Scheme

- **Objective:** To provide industry-relevant skill training to students, ensuring they are well-prepared for the job market.
- **Target Audience:** Polytechnic and college students across Tamil Nadu.
- **Key Areas:** Digital skills, Industry 4.0, IoT, AR/VR, PCB design, and more.

#### Industry 4.0 and IoT in Metallurgy

For final-year metallurgy students, the focus on Industry 4.0 and IoT can be particularly beneficial. Here's how:

1. **Smart Manufacturing:** Integration of IoT devices in manufacturing processes to monitor and optimize production in real-time.
2. **Predictive Maintenance:** Using IoT sensors to predict equipment failures before they occur, reducing downtime and maintenance costs.
3. **Data Analytics:** Leveraging big data and analytics to improve material properties and performance.
4. **Automation:** Implementing robotics and automation in metallurgical processes to enhance efficiency and precision.

#### Practical Exposure and Collaboration

- **Industrial Visits:** Regular visits to industries implementing Industry 4.0 technologies.
- **Guest Lectures:** Sessions by industry experts on the latest trends and technologies.
- **Certification Programs:** Specialized courses and certifications in IoT and Industry 4.0 technologies.

#### Benefits for Sakthi Polytechnic College Students

- **Enhanced Employability:** Training in cutting-edge technologies makes students more attractive to potential employers.
- **Skill Development:** Hands-on experience with the latest tools and technologies.

## **Industrial Visit**

On behalf of the Naan Mudhalvan - Industry 4.0 scheme, the final year and V semester Metallurgy students of Sakthi Polytechnic College, Sakthi Nagar, participated in an industrial visit to the Non-Destructive Test (NDT) training centre at Queen India Engineering Services, Lakshmi Nagar, Erode. This visit aimed to provide students with comprehensive knowledge and hands-on training in NDT testing methods.

## **Objectives**

The primary objectives of the industrial visit were:

1. To familiarize students with various NDT testing methods.
2. To provide hands-on training and practical exposure to NDT techniques.
3. To enhance students' understanding of Industry 4.0 applications in metallurgy.
4. To bridge the gap between theoretical knowledge and practical application.

## **Participants**

**Total Number of Students Attended:** 61

- **SPC Coordinators:**
  - Mr. P. Govindarasu, Lecturer / Metallurgy
  - Mr. J. Yuvaraja, Lecturer / Metallurgy
- **Naan Mudhalvan (TANSAM) Trainer:**
  - Mr. S. M. Naveen Kumar
- **QIES-NDT Coordinator:**
  - Ms. L. Gowri Shankari

## **Activities and Training**

During the visit, students were introduced to various NDT testing methods, including:

1. **Ultrasonic Testing (UT):** Students learned about the principles of ultrasonic waves and their application in detecting internal flaws in materials.
2. **Radiographic Testing (RT):** The use of X-rays and gamma rays to inspect the internal structure of materials was demonstrated.
3. **Magnetic Particle Testing (MPT):** Students observed the process of detecting surface and near-surface discontinuities in ferromagnetic materials.
4. **Liquid Penetrant Testing (LPT):** The method of using liquid penetrants to reveal surface-breaking defects was explained and demonstrated.



5. **Eddy Current Testing (ECT):** Students were introduced to the principles of eddy currents and their application in detecting surface and sub-surface defects.

### **Hands-On Training**

The hands-on training sessions allowed students to apply the theoretical knowledge they had gained. Under the guidance of experienced trainers, students performed various NDT tests on sample materials. This practical exposure helped them understand the intricacies of each testing method and its real-world applications.

### **Feedback and Observations**

The students expressed their appreciation for the opportunity to gain practical experience in NDT testing methods. They found the training sessions to be highly informative and beneficial for their future careers in metallurgy. The coordinators and trainers were commended for their expertise and willingness to share their knowledge.

### **Conclusion**

The industrial visit to Queen India Engineering Services was a resounding success. It provided the students of Sakthi Polytechnic College with valuable insights into NDT testing methods and their applications in the field of metallurgy. The hands-on training sessions were particularly beneficial in bridging the gap between theoretical knowledge and practical application. We extend our best wishes to the students for their future endeavours in their respective fields of interest.

### **Acknowledgements**

We would like to extend our gratitude to the following individuals for their support and coordination:

- **SPC Coordinators:**
  - Mr. P. Govindarasu
  - Mr. J. Yuvaraja
- **Naan Mudhalvan (TANSAM) Trainer:**
  - Mr. S. M. Naveen Kumar
- **QIES-NDT Coordinator:**
  - Ms. L. Gowri Shankari

# PHOTOS

