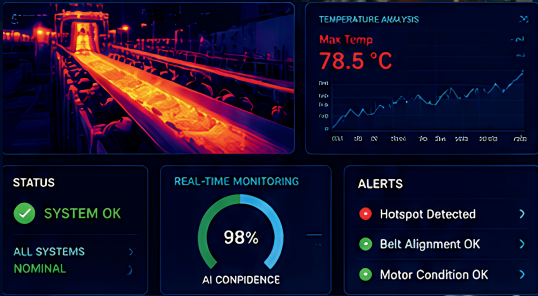




# Industrial AI & Smart Automation Solutions

## Delivering Intelligent Monitoring, Predictive Maintenance & Industry 4.0 Solutions



### Conveyor Health Monitoring

AI-based thermal monitoring system for conveyor safety and hotspot detection.

- Thermal hotspot detection
- Real-time monitoring
- Fire risk prevention



### Industrial IoT Gateway

Advanced industrial gateway supporting real-time sensor communication and cloud analytics.

- Multi-protocol support
- Edge AI capability
- Smart factory integration



### Smart Water Monitoring System

Industrial water tank monitoring system with real-time alerts and dashboard analytics.

- Remote monitoring
- SMS alert system
- Water management optimization



### Transformer Condition Monitoring

Online transformer health monitoring with predictive maintenance analytics.

- Early fault detection
- Cloud monitoring
- Reduced downtime

## INDUSTRIES WE SERVE



CEMENT PLANT



STEEL PLANT



POWER PLANT



FERTILIZER PLANT



SUGAR PLANT



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constromechsolution.com

## Delivering Smart Industrial Automation for Sustainable Manufacturing



# Constromech Engineering Solution

Outlast | Outperform | Outstand



In Joint Venture with  
**Plumule Research LLP**

Imagination | Innovation | Integration

## ABOUT US

### Constromech Engineering Solution

Constromech Engineering Solution delivers industrial engineering, conveyor systems, maintenance support, and smart automation solutions for modern manufacturing industries.

Through advanced Industry 4.0 integration and AI-based technologies, we help industries improve operational efficiency, plant safety, predictive maintenance, and real-time monitoring.



## WHO WE ARE



**INDUSTRIAL ENGINEERING & CONVEYOR SOLUTIONS EXPERTISE**



**SMART AUTOMATION & SYSTEM INTEGRATION**



**PLANT MAINTENANCE & RELIABILITY SUPPORT**



**FOCUS ON SAFETY, EFFICIENCY & SUSTAINABILITY**



**CUSTOMER-CENTRIC & SOLUTION-DRIVEN APPROACH**

## OUR COMMITMENT



**INNOVATION**  
Continuous innovation to deliver smart and efficient solutions.



**RELIABILITY**  
Reliable systems for critical industrial operations.



**CUSTOMER SUCCESS**  
Dedicated to customer satisfaction and long-term partnerships.



**SUSTAINABILITY**  
Solutions that promote safety, efficiency and sustainable growth.

## TECHNOLOGY PARTNERSHIP

In collaboration with Plumule Research LLP, we bring advanced AI, IoT and analytics capabilities to deliver intelligent and reliable industrial solutions.

### OUR TECHNOLOGY STRENGTHS



#### Industrial IoT Systems

Real-time data acquisition, connectivity and cloud integration.



#### AI Vision & Analytics

Computer vision, deep learning and edge AI for industrial applications.



#### Thermal AI Monitoring

Thermal imaging and hotspot detection for safety and predictive maintenance.



#### Conveyor Health Monitoring

AI-based conveyor monitoring for wear, hotspot and fire prevention.



#### Smart Water Monitoring

Water tank level monitoring with real-time alerts and analytics.



#### Transformer Monitoring

Online condition monitoring for transformers and electrical assets.



#### Cloud Analytics & Dashboards

Advanced dashboards, analytics and predictive insights.

## INDUSTRIES WE SERVE



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Bhilai Chhattisgarh 490006

Scan to visit our website



### Our Vision

The Modern & Impactful Choice

### Our Mission

Deliver Secure & Sustainable Innovation to Production



## CORE SOLUTION

AI-Powered • IIot Enable • Future Ready



01

### CONVEYOR HEALTH MONITORING

AI-based thermal monitoring system for real-time detection of hotspots, belt misalignment, abnormal temperature rise, and fire hazards in conveyor systems.

#### Key Benefit

- Real-time thermal analysis
- Conveyor life optimization
- Reduced downtime
- Fire prevention & safety
- Predictive maintenance
- Improved operational safety



02

### INDUSTRIAL IIOT GATEWAY

Advanced industrial IIot gateway designed for secure data acquisition, multi-protocol communication, cloud integration, and real-time industrial analytics.

#### Key Benefit

- Multi-protocol support
- Real-time data transmission
- Smart factory ready
- Edge AI capability
- Cloud connectivity
- Secure communication architecture



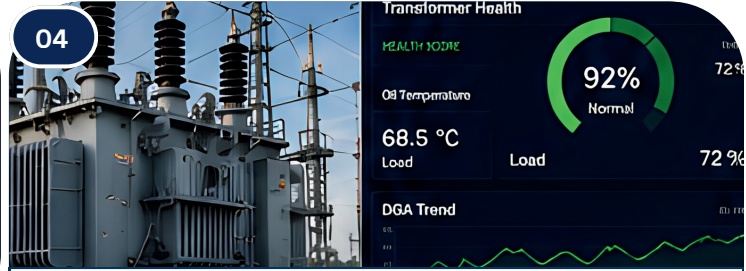
03

### SMART WATER MONITORING

Real-time water tank level monitoring system with automated alerts, dashboard analytics, and remote monitoring capabilities for industrial facilities.

#### Key Benefit

- Remote tank monitoring
- SMS & email notifications
- Dashboard analytics
- High/Low level alerts
- Water management optimization
- Improved resource efficiency



04

### TRANSFORMER CONDITION MONITORING

Online transformer health monitoring system using DGA analytics, temperature monitoring, and predictive maintenance technologies.

#### Key Benefit

- Early fault detection
- Health scoring analytics
- Extended asset life
- DGA & temperature monitoring
- Predictive maintenance
- Reduced operational downtime



05

### AI Classification

- Dolomite
- Limestone

### AI-BASED MATERIAL CLASSIFICATION

Microscopic AI imaging system designed for real-time material classification and quality analysis on conveyor systems.

#### Key Benefit

- Inline material identification
- High accuracy AI analysis
- Real-time decision making
- Improved quality control
- Reduced manual inspection
- Increased process efficiency



06

### AUTONOMOUS TRAIN DETECTION SYSTEM

Radar and AI-based automatic train detection system with audible and visual alerts for industrial railway safety applications.

#### Key Benefit

- Real-time train detection
- Enhanced worker safety
- Reduced human intervention
- Automated alerts (siren & flasher)
- All-weather operation
- 24/7 unmanned monitoring

### KEY BENEFITS ACROSS SOLUTIONS

- IMPROVE SAFETY
- INCREASE EFFICIENCY
- REDUCE DOWNTIME
- LOWER MAINTENANCE COST
- REAL-TIME VISIBILITY
- DATA-DRIVEN DECISIONS

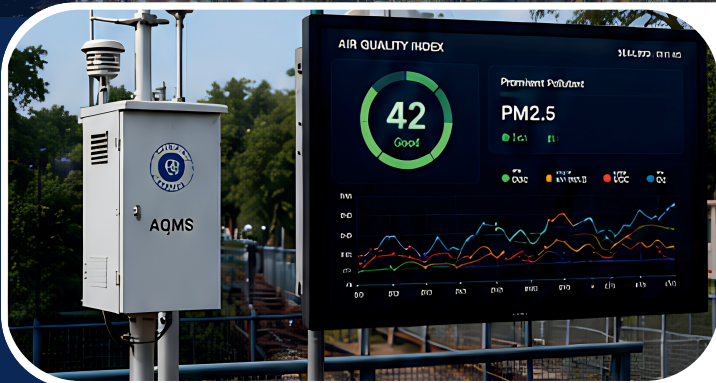
### OUR TECHNOLOGY STACK

- AI / ML
- COMPUTER VISION
- CLOUD COMPUTING
- WIRELESS CONNECTIVITY
- INDUSTRIAL IIOT
- THERMAL IMAGING
- EDGE ANALYTICS
- DATA ANALYTICS



## CASE STUDIES

Real Implementations. Real Impact.



### 01 INDIAN RAILWAYS, SEALDAH Real-Time Air Quality Monitoring System

Deployment of multiple real-time ambient air quality monitoring stations with cloud connectivity and integration with a live AQI dashboard for continuous environmental monitoring.

#### Impact

- ✓ Continuous air quality visibility
- ✓ Improved environmental awareness
- ✓ Data-driven decision making
- ✓ Enhanced public monitoring system

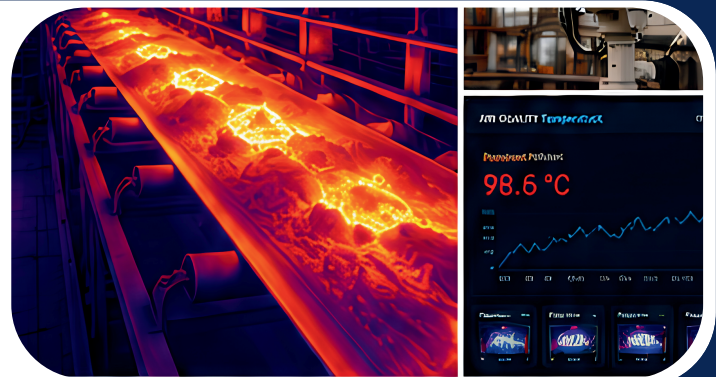


### 02 DURGAPUR STEEL PLANT Conveyor Health Monitoring System

AI-based thermal imaging solution deployed for continuous monitoring of sinter conveyor systems to detect abnormal temperature rise, hotspots, belt issues, and fire hazards.

#### Impact

- ✓ Early fire hazard detection
- ✓ Reduced downtime & maintenance cost
- ✓ Improved conveyor reliability
- ✓ Enhanced operational safety



### 03 MATIX FERTILIZER Autonomous Train Detection & Alert System

Radar and AI-based automated train detection system with integrated siren, flasher, and buzzer alert mechanism for industrial railway worker safety.

#### Impact

- ✓ 100% automated train detection
- ✓ Zero missed detections
- ✓ Improved industrial railway safety
- ✓ Reduced manual dependency



### 04 DURGAPUR STEEL PLANT Smart Water Monitoring System

Industrial IoT-based smart water monitoring solution deployed for real-time monitoring of multiple water tanks with dashboard analytics and automated alert systems.

#### Impact

- ✓ Real-time visibility of all tanks
- ✓ Prevented overflow & dry-run conditions
- ✓ Improved operational efficiency
- ✓ Efficient water management



## TRUSTED BY INDUSTRY LEADERS



INDIAN RAILWAYS



DURGAPUR STEEL PLANT



MATIX FERTILIZERS



PROJECT CONCERN INTERNATIONAL



IIT KGP



MULTIPLE INSTALLATION ACROSS INDIA



AI POWERED SOLUTION



HIGH RELIABILITY & ACCURACY



END TO END SUPPORT MAINTENANCE

DRIVING SMART INDUSTRIES TOWARDS A SUSTAINABLE FUTURE