

#InvestmentCastingSolutions

#AutomatedWaxAssemblyCell

#AutomatedWaxInjectionCell

#Automation

#Pick&Place

#Deflashing

#ModtechShellRoomSolutions

#IIoT

#TurnkeySolutions

#InvestmentCastingSolutions

#Mjppäk

#ModtechWaxInjectionMachine

#AutomatedShellSystem

#RoboticHandling

#ModtechCeramicInjectionMachine

#AutomatedShellSystem

#WaxRoomAutomation

#KukaRobotics

#InvestmentCastingSolutions

#EndtoEndSolutions



LET QUALITY BE THE **DIFFERENCE**

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**MODTECH**  
**SHELL ROOM**  
**SOLUTIONS**



**MODTECH**

FLEXIBLE | CONSISTANCE | RELIABLE & MODULAR

## MODTECH ELEMENTS FOR INTEGRATED FULLY AUTOMATIC SHELLING SYSTEM



- ROBOTS
- SLURRY TANKS
- SANDERS
- SHELL DRYING SYSTEM
- WASH & RINSE TANK
- PRE-WET TANK
- SLURRY PREPARATION & HANDLING
- LOAD / UNLOAD STATION
- SHELL MANAGEMENT SOFTWARE

## ROBOTS



- Modtech offers 6 Axis Robots with a wide range of payload capacity (90 kg. to 1300 kg.) Robot 7<sup>th</sup> Axis (Liner Track) can be offered based on the application requirement
- Modtech has experience working with reputed Robot Brands like KUKA, FANUC, ABB, Kawasaki



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## SLURRY TANKS



Modtech Slurry tanks are available in LT-ST Version for handling large volume Slurry in ST-ST Version for handling Small Volume of Slurry

### KEY FEATURES

- LT-ST tanks are available in drum dia from 1000mm to 1500mm & drum depth from 1000mm to 1500mm
- ST-ST tanks are available in drum dia from 600mm to 800mm & drum depth from 600mm to 900mm
- Adjustable Mixing Blade • Variable Speed of Drum

### OPTIONAL FEATURES

- PP liner for drum
- Edge Cover
- Manual/Automatic Lid
- Mixing Blade with Water cooling facility
- Temperature Control system for Ceramic Slurry
- Custom diameter & Depth available on request
- Slurry Liquid Dosing System to maintain the Viscosity of the Slurry
- Slurry Viscosity Measuring Meter



**Rotary Drum Sanders**

Modtech Rotary Drum Sanders are available in SS-RS Version & in LS-RS Version

**KEY FEATURES**

- Effective area of SS-RR sanders
  - Shower area from 500mm x500mm to 800mmx800mm
- Effective area of LS-RR sanders
  - Shower area from 1000mm x1000mm to 2000mmx2000mm
- Removable Mesh of the sand shower
- Variable Speed of Drum
- Dust extraction hood is the part of the Drum Sander
- Manual Feed Hopper is the part of supply
- Lumps removal system is the part of the supply

**OPTIONAL FEATURES**

- Sand Loading Elevator for Automatic sand filling
- Adjustable Sand Buckets to precisely set the distribution of sand
- Dust Collector for Environment & Human Safety

**Vertical Drum Sanders**

Modtech Vertical Sanders are available in SS-VS Version & in LS-VS Version

**KEY FEATURES**

- Effective area of SS-VS sanders shower area from 500mm x500mm to 800mmx800mm
- Effective area of LS-VS sanders shower area from 1000mm x1000mm to 1500mmx1500mm
- Removable Mesh of the sand shower
- Lumps removal system is the part of the supply
- Dust extraction ports are the part of the Sander

**OPTIONAL FEATURES**

- Dust Collector for Environment & Human Safety
- Automatic Sand Filling System

**Fluidized Bed Sanders**

Modtech Rotary Drum Sanders are available in ST-FB Version & in LT-FB Version

**KEY FEATURES**

- LT-FB tanks are available in drum diameter from 1000mm to 1500mm & drum depth from 1000mm to 1500mm
- ST-FB tanks are available in drum diameter from 600mm to 800mm & drum depth from 600mm to 900mm
- Base Plenum made with multiple zones to evenly distribute the Air of Blower
- Dust extraction hood is the part of the Drum Sander

**OPTIONAL FEATURES**

- Sand Loading Elevator for Automatic sand filling
- Dust Collector for Environment & Human Safety
- Manual Feed Hopper
- Variable Speed of Blower

## SHELL DRYING SYSTEM



### Conveyor System

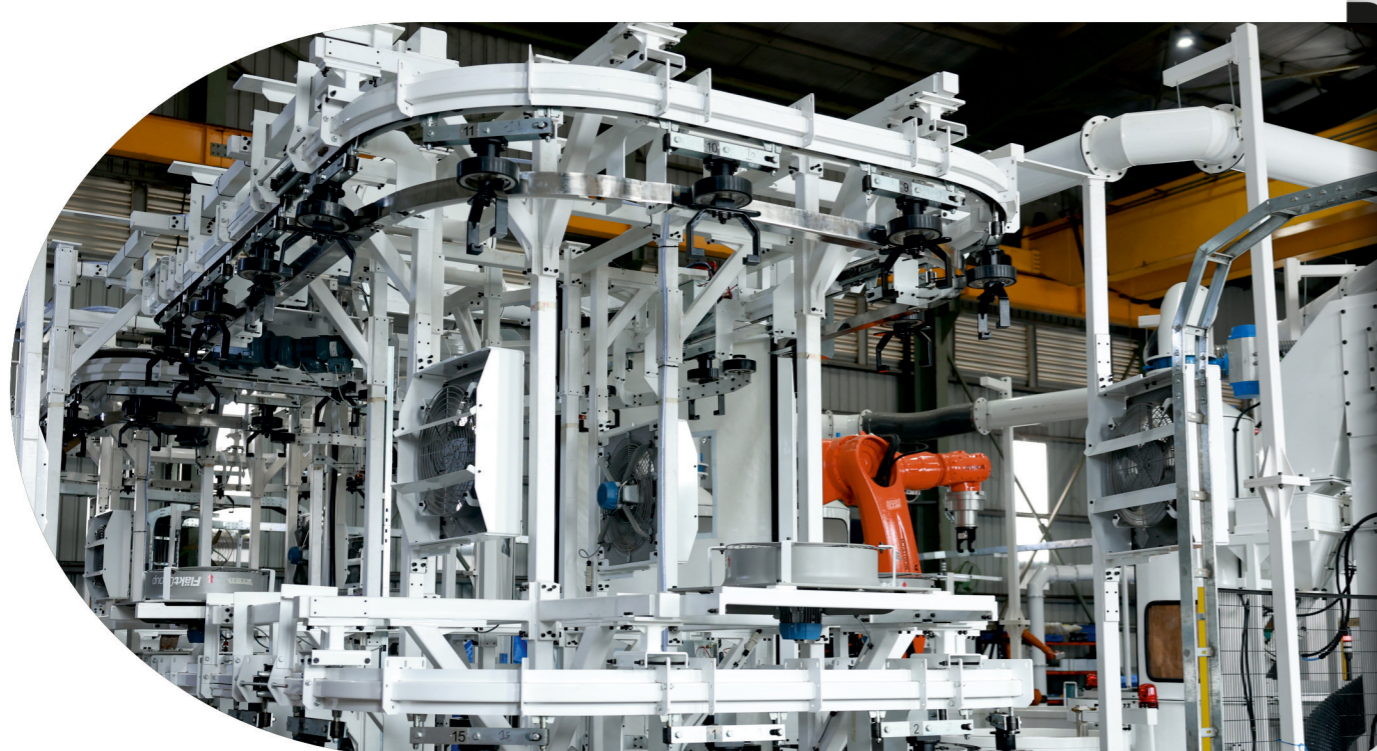
- Modtech Robotic Shell Room offers semi enclosed conveyor track to prevent it from the Dust
- Conveyors are designed to handle wide variety of Shell weight on individual carriers

#### KEY FEATURES

- Enclosed Track
- Precise Position accuracy with Inbuilt Drive Encoder
- Variable Speed
- Linear speed up to 3 Mtr. /Min.

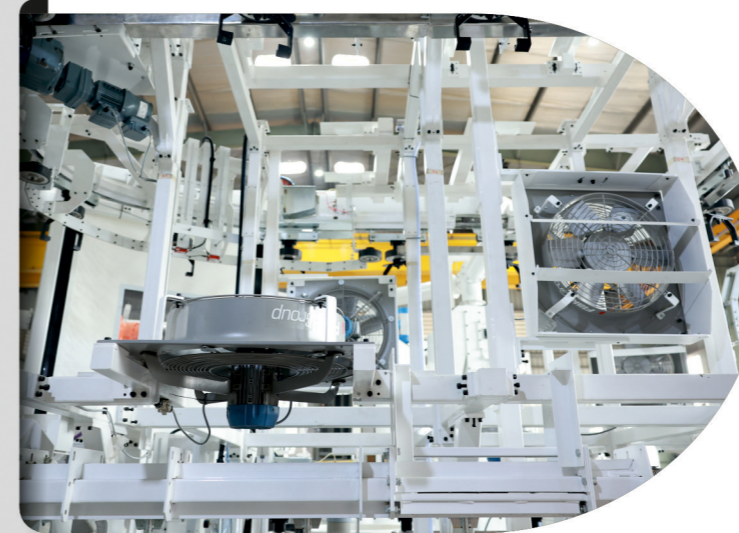
#### OPTIONAL FEATURES

- Rotating Hanger System
- Dual Carrier



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### Air Movement System



- Air Movement system consist of Fans/Group of Fans which is located within the Conveyor Room
- Fans are also adjustable in an angle on its axis, Adjustable deflectors can divert the air flow as per the adjustment

#### KEY FEATURES

- Air flow Speed in range from 0 to 10 m/Sec to suit the applied coat requirement for drying
- Fix/Variable Speed of Fans/Group of Fans

#### OPTIONAL FEATURES

- Fans height can be adjustable in Vertical direction
- Fans are also adjustable in an angle on its axis
- Adjustable deflectors can divert the air flow as per the adjustment

### Environment Control System

- Modtech Environment Control System offer a very precise Temperature & Humidity control with the combination of Cooling System, Heating System and Dehumidification System & Humidification system
- Modtech Environment Control system comes with Out of Range Alarms system which gives intimation if the values goes out then set parameters
- Environment control system plays a very vital role in Shell building Process
- PID Control System



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## WASH & RINSE TANK



- Wash Tank & Rinse Tank are designed to Wash & Rinse the Wax Patterns before applying the Ceramic Coatings

### KEY FEATURES

- Tanks are made from Stainless steel material
- Available in customized sizes

### OPTIONAL FEATURES

- Air Agitation
- Manual Lid
- Heating system
- Edge Cover

## PRE-WET TANK

- Pre-Wet Tank is designed to Pre-Wet the Shell where it is essential part of the process

### KEY FEATURES

- Tanks are made from Stainless steel material.
- Available in customized sizes

### OPTIONAL FEATURES

- Air Agitation
- Manual Lid
- Edge Cover



## SLURRY PREPARATION & HANDLING

### Ceramic Mixing System

- Modtech Ceramic mixing system is combination of Power mixer and a right structure to make the vertical up-down motion of the power mixer

### KEY FEATURES

- Mixer Impellers are available in stainless steel, Heavy duty plastic
- Heavy Duty Electric Axis for the Up-down movement of Power mixer with Brake motor
- Power mixers comes with High Shear, High Flow capability
- Variable drive for the Mixer rotation



### OPTIONAL FEATURES

- Stainless Steel Drum
- Movable Castor Wheels
- Manual Lid on Drum

### Slurry Preparation Tank

- Modtech Slurry Preparation tank is combination of Power mixer and Modtech LT-ST/ST-ST Series Slurry Tanks
- Power Mixers are mounted on Slurry tanks with a Pivotal Mechanism to adjust the mixer angle

### KEY FEATURES

- Power mixers comes with High Shear, High Flow capability
- Mixer Impellers are available in stainless steel, Heavy duty plastic
- Variable drive for both Mixer & Tank rotation

### OPTIONAL FEATURES

- Manual Lid for Tank
- PP Liner for Tank
- Edge Cover for Tank





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## SHELL-ROOM MANAGEMENT SOFTWARE (Mjppëk)

### Mjppëk The Most advanced AI enabled comprehensive Shell-Room Management software

- Mjppëk is a cutting-edge web-based application designed to streamline Shell Management and process parameters
- Mjppëk offers a comprehensive solution for Shell-Room with its intuitive interface and powerful features. Mjppëk revolutionizes the way of working for IC industry in the digital age

#### KEY FEATURES

- Web based designed software
- User friendly User Interface (UI)
- SQL Database for data storage
- Optional language available
- Light/Dark Theme
- Recipe Management Module
- User Login Module
- Material Management for Equipment
- Individual Hanger Data
- Alarm and Diagnosis Module
- Equipment status and graphical representation
- Manual Setup Mode for Equipment
- **Reporting Module:**
  - Temperature/Humidity Report
  - Alarm Report
  - Hanger Detail Report
  - Material Use and Equipment Parameters Report
  - Rejection Data Report

#### SCREENSHOTS



OVERVIEW



RECORDS



RECIPE MANAGEMENT



RECIPE PARAMETERS



MANUAL OPERATION



DARK THEME

## Slurry Transfer Pump



- Modtech Slurry Transfer Pump provides a High Flow transfer of Slurry from the Preparation tanks to the Slurry tank used in Coating
- Heavy duty pneumatically operated Diaphragm pump is mounted on the rigid structure having caster wheels to move the whole system
- A tank made from the heavy duty plastic use to flush the Slurry material within the system

## LOAD/UNLOAD STATION



- Modtech Load/Unload station made from a rigid structure to load /unload the Shells
- It offers a rotating shell hanger mechanism which gives easiness to operator to mount multiple shell on the cluster
- Special safety system in integrated for both Machine & Human safety