

The Global Market for In-mold Electronics (IME) 2025-2035

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Abstracts

In-mold electronics (IME), also sometimes known as plastronics, is an innovative technology that combines traditional injection molding with printed electronics. This process allows for the embedding of functional electronic elements, such as touch sensors, displays, and lighting, directly into plastic components during the molding process. This process allows for the creation of smart surfaces and complex electronic functionalities within a single manufacturing step. IME technology enables the embedding of touch sensors, lighting, and other electronic functionalities into 3D molded surfaces, resulting in streamlined manufacturing processes and reduced assembly costs. This not only enhances product performance but also improves aesthetics by removing the need for external components.

The advantages of IME include:

Design Flexibility: IME enables the creation of complex shapes and designs that are not possible with traditional electronics integration methods.

Durability: The electronic components are protected within the molded plastic, making them more resistant to wear and environmental factors.

Cost Efficiency: By integrating multiple functions into a single part, IME can reduce assembly costs and improve manufacturing efficiency.

IME technology typically involves a three-step process:

Printing of Electronic Circuits: This step includes the application of conductive inks to create the necessary electronic pathways.

Forming: The printed circuits are then formed into the desired shape, which is crucial for ensuring that the electronics fit seamlessly into the final product.

Molding: Finally, the formed circuits are encapsulated within a molded part, creating a durable and functional electronic component that can be used in various applications, such as automotive interiors, consumer electronics, and medical devices.

IME products are particularly beneficial in industries such as automotive, consumer electronics, and medical devices, where space and weight savings are critical. The technology not only enhances product design but also improves durability and performance by eliminating the need for separate electronic assemblies, enabling the creation of user-friendly interfaces and complex electronic systems within a single molded part. IME products are designed to meet the growing demand for smart, connected devices, enabling manufacturers to innovate and differentiate their offerings in competitive markets.

The Global Market for In-Mold Electronics (IME) 2025-2035 provides an in-depth analysis of the rapidly growing global in-mold electronics (IME) market, examining key trends, technologies, materials, applications, and market forecasts from 2025 to 2035. The study offers detailed insights into this transformative technology that integrates electronic functionality directly into molded plastic components, revolutionizing manufacturing across multiple industries. The report provides extensive coverage of IME manufacturing processes, including detailed analysis of production methods, component integration, and material requirements. Key focus areas include surface functionalization technologies, conductive inks, transparent conductors, and substrate materials essential for successful IME implementation.

Market analysis covers major application sectors including:

Automotive human-machine interfaces

White goods and appliances

Medical devices

Industrial controls

Wearable electronics

The study examines critical aspects of IME technology including:

Manufacturing processes and requirements

Component integration strategies

Materials development and selection

Quality control and testing

Regulatory considerations

Sustainability aspects

Technical coverage includes detailed analysis of:

Conductive ink formulations

Transparent conductive materials

Substrate and thermoplastic selection

Integration of electronic components

Surface treatment technologies

Testing and validation methods

The report features comprehensive market data including:

Market size and growth projections (2025-2035)

Revenue forecasts by application sector

Regional market analysis

Technology adoption trends

Competitive landscape assessment. The report profiles leading companies across the IME value chain, including Canatu, CHASM Technologies, Covestro, Dupont, E2IP Technologies, Elantas, Embega, FORVIA Faurecia, Genes'Ink, Henkel, Kimoto, Nissha, TactoTek Oy, and more. These companies represent various segments of the IME industry including material suppliers, equipment manufacturers, technology developers, and end-product manufacturers.

Special focus is placed on emerging technologies and innovations:

Advanced material developments

Novel manufacturing processes

Integration strategies

Future technology roadmaps

Market opportunities and challenges

Contents

1 EXECUTIVE SUMMARY

- 1.1 Design limitations on surfaces
- 1.2 Applications
- 1.3 IME manufacturing
- 1.4 Investments
- 1.5 Sustainability
- 1.6 Market outlook
- 1.7 Market forecasts

2 INTRODUCTION

- 2.1 Functionality Integration
- 2.2 3D Electronics
- 2.3 IME Value Chain

3 IME MANUFACTURING

- 3.1 IME components
- 3.2 IME production
- 3.3 Implementation approaches
 - 3.3.1 Hybrid
 - 3.3.2 One-film vs two-film
 - 3.3.3 Implementation of multilayer circuits
 - 3.3.4 Integration of integrated circuits in IME
 - 3.3.5 Print-then-plate
 - 3.3.6 Automation
 - 3.3.7 Transfer printing technology
 - 3.3.8 Evaporated line technology
 - 3.3.9 Capacitive touch functionality
- 3.4 Other manufacturing methods
- 3.5 Functional film bonding
- 3.6 Metallization Methods
- 3.7 MID technology
 - 3.7.1 Aerosol deposition
 - 3.7.2 Laser Direct Structuring (LDS)
 - 3.7.3 Two shot molding

- 3.7.4 3D surfaces
- 3.7.5 Impulse printing technology
- 3.7.6 Pad printing
- 3.7.7 Spray metallization
- 3.8 Multifunctional composites
- 3.9 Additive manufacturing

4 IME COMPONENTS INTEGRATION

- 4.1 Capacitive sensing technology
 - 4.1.1 Overview
 - 4.1.2 Operation
- 4.2 Lighting
- 4.3 Haptics
- 4.4 3D Displays
- 4.5 Antenna

5 MATERIALS FOR IME

- 5.1 Overview
- 5.2 Conductive inks
 - 5.2.1 Materials
 - 5.2.2 Stretchable inks
 - 5.2.3 Inks for IME
- 5.3 Dielectric inks
- 5.4 Electrically conductive adhesives
- 5.5 Transparent conductive materials
 - 5.5.1 Overview
 - 5.5.2 Types
 - 5.5.3 Carbon nanotube (CNT) films
 - 5.5.4 Poly(3,4-ethylenedioxythiophene) polystyrene sulfonate (PEDOT:PSS)
 - 5.5.5 Carbon nanobuds
 - 5.5.6 Metal mesh
- 5.6 Substrate and thermoplastic materials

6 MARKETS FOR IME

- 6.1 Automotive
 - 6.1.1 Overview

- 6.1.2 Commercial applications
 - 6.1.2.1 Sensing
 - 6.1.2.2 Headlamp covers
 - 6.1.2.3 Steering Wheel
- 6.1.3 Global market forecast
- 6.2 White Goods
 - 6.2.1 Overview
 - 6.2.2 Applications
 - 6.2.3 Global market forecast
- 6.3 Medical Devices
 - 6.3.1 Overview
 - 6.3.2 Applications
 - 6.3.3 Global market forecast
- 6.4 Industrial
 - 6.4.1 Overview
 - 6.4.2 Applications
- 6.5 Wearable Electronics
 - 6.5.1 Overview
 - 6.5.2 Applications
- 6.6 Other Markets and Applications

7 COMPANY PROFILES

8 REFERENCES

List Of Tables

LIST OF TABLES

Table 1. Surface Functionalization Technologies Comparison
Table 2. In-Mold Electronics Applications.
Table 3. IME Manufacturing Requirements.
Table 4. Competing Manufacturing Methods.
Table 5. Smart Surface Manufacturing Methods.
Table 6. Investment in In-Mold Electronics
Table 7. IME Applications and Stage of Development.
Table 8. IME Benefits and Challenges.
Table 9. Global Market Forecast for IME Component Area by Application, 2025-2035 (m?).
Table 10. Global Market Forecast for IME Revenue by Application, 2025-2035 (US\$ Millions).
Table 11. In-mold Electronics Applications and Markets.
Table 12. Approaches to 3D Printed Electronics.
Table 13. Manufacturing of IME Components.
Table 14. Manufacturing Methods Comparison
Table 15. IME Production Equipment.
Table 16. IC Package Requirements for IME.
Table 17. Process Comparison.
Table 18. Comparison of Metallization Methods.
Table 19. MID Manufacturing Methods Comparison
Table 20. Applications of LDS.
Table 21. Applications for Printing Wiring onto 3D Surfaces.
Table 22. Processes for 3D Electronics.
Table 23. Printed Capacitive Sensor Technologies.
Table 24. Conventional Backlighting vs Integrated Lighting with IME.
Table 25. Materials for IME.
Table 26. Material Composition comparison of IME vs Conventional HMI.
Table 27. IME Materials companies.
Table 28. Conductive Ink Materials
Table 29. In-mold Conductive Inks.
Table 30. Conductive Ink Requirements for IME.
Table 31. Properties of Stretchable/Thermoformable Conductive Inks
Table 32. Types of Conductive Adhesives.
Table 33. Transparent Conductive Materials for IME.

Table 34. Carbon Nanotube In-mold Films.

Table 35. PEDOT:PSS Films

Table 36. Substrates and Thermoplastics for IME.

Table 37. IME in Automotive HMI.

Table 38. Commercial Automotive In-mold Decoration.

Table 39. Global market forecast for IME in the Automotive Market 2025-2035 (USD Millions).

Table 40. Applications of IME in White Goods.

Table 41. Example IME for White Goods products.

Table 42. Global market forecast for IME in White Goods Market 2025-2035 (USD Millions).

Table 43. Medical Device Applications.

Table 44. Global market forecast for IME in Medical Devices Market 2025-2035 (USD Millions).

Table 45. Industrial IME Applications

Table 46. Wearable IME Applications.

Table 47. Other markets and applications for IME.

List Of Figures

LIST OF FIGURES

Figure 1. IME device.

Figure 2. IME manufacturing process flow.

Figure 3. Global Market Forecast for IME Component Area by Application, 2025-2035 (m?).

Figure 4. Global Market Forecast for IME Revenue by Application, 2025-2035 (US\$ Millions).

Figure 5. IME Value Chain.

Figure 6. Global market forecast for IME in the Automotive Market 2025-2035 (USD Millions).

Figure 7. Top panel of the remote control, made with in-mold decoration (IMD).

Figure 8. Global market forecast for IME in White Goods Market 2025-2035 (USD Millions).

Figure 9. Global market forecast for IME in Medical Devices Market 2025-2035 (USD Millions).

Figure 10. Origo Steering Wheel.

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