+357 96 030922
info@marketpublishers.com

# India Nanotechnology Market - Strategic Insights and Forecasts (2026-2031)

https://marketpublishers.com/r/IE9DC0AB2EB9EN.html
Date: March 2026
Pages: 83
Price: US$ 2,850.00 (Single User License)
ID: IE9DC0AB2EB9EN

## Abstracts

The India Nanotechnology Market is projected to reach USD 2.5 billion by 2031, growing from USD 1.3 billion in 2026, at a Compound Annual Growth Rate (CAGR) of 14.0%.

The India nanotechnology market functions as a dual-speed ecosystem, simultaneously progressing along foundational research and applied commercial development tracks. Its trajectory is deeply interwoven with national strategic imperatives in public health, environmental management, digital sovereignty, and advanced manufacturing. Primary demand does not originate from mature, commoditised product lines but from cutting-edge application sectors where nanoscale properties deliver performance advantages that conventional materials cannot replicate. Advanced drug delivery systems, sustainable energy solutions, precision environmental remediation, and next-generation electronics collectively define the market's growth profile. Government investment through the Nano Mission provides the institutional bedrock, while an expanding cohort of domestic firms and multinational participants accelerates the translation of laboratory-scale innovation into commercially viable products.

Market Drivers

The modernisation of India's healthcare infrastructure is a primary demand catalyst, directly increasing procurement of advanced nanomedicines and drug delivery components. The application of nanoparticles in precision oncology and diagnostics, offering enhanced drug efficacy and reduced systemic toxicity, compels pharmaceutical companies to source specialised nanomaterials including liposomes, polymeric nanoparticles, and quantum dots. India's large domestic generics manufacturing base and expanding clinical trial landscape further drive adoption of nanoformulation

+357 96 030922
info@marketpublishers.com

technologies for bioequivalent and novel drug products. The national imperative for sustainable environmental management, particularly water purification, generates growing industrial demand for green-synthesised biogenic nanomaterials and photocatalysts capable of degrading persistent organic pollutants and microbial contaminants that conventional large-scale filtration cannot effectively address. The relentless push for miniaturisation and performance enhancement in electronics creates non-discretionary demand for high-performance nanomaterials essential for new-generation semiconductors and advanced conductive composites. The convergence of nanotechnology with artificial intelligence and machine learning is accelerating the design and optimisation of novel nanomaterials, shortening research-to-market timelines and improving cost-efficiency. India's sustained investment through the Department of Science and Technology's Nano Mission directly stimulates academic and institutional research, generating foundational demand for nanoscale tools and instruments across public research centres.

## Market Restraints

The primary constraint on market expansion is the substantial cost and complexity of scaling up the synthesis and purification of high-quality nanomaterials from laboratory to industrial production volumes. This technological bottleneck contributes to pricing volatility and limits immediate demand for mass-market applications, restricting the addressable customer base to high-value, quality-driven segments. High-purity precursor chemicals are predominantly imported from production hubs in North America, Europe, and East Asia, exposing domestic manufacturers to global commodity pricing pressures and logistics-related cost headwinds. The specialised, low-volume nature of domestic nanomaterial production means that economies of scale are rarely achieved, keeping the final price of pharmaceutical-grade nanoparticles and specialty carbon nanotubes significantly elevated relative to bulk chemical inputs. The regulatory treatment of nanopharmaceuticals as new drugs under the Central Drugs Standard Control Organisation imposes a higher barrier to market entry and a longer time-to-market, constraining near-term commercial demand. Dependence on imports for sophisticated nanodevices and high-end precursors introduces supply chain vulnerabilities, extended lead times, and exposure to geopolitical constraints that limit the pace of domestic commercialisation.

## Technology and Segment Insights

By technology, nanomaterials represent the most commercially active segment, with demand concentrated across several high-value application verticals. Nanoparticles and

+357 96 030922
info@marketpublishers.com

nanocomposites, including carbon-based nanotubes and polymer nanocomposites, command strong demand from the aerospace and defense sector, where requirements for superior strength-to-weight ratios, enhanced thermal stability, and electromagnetic shielding are non-negotiable. Graphene and quantum dots are gaining traction in electronics miniaturisation, energy storage, and diagnostic applications. Biogenic nanomaterials and photocatalysts are in active procurement for water purification and environmental remediation programmes. By application, healthcare and pharmaceuticals, aerospace and defense, energy, and electronics represent the leading demand verticals. The pharmaceutical end-user segment generates high-margin, specialised demand for liposomal formulations, albumin-bound nanoparticles, and gold nanoparticles as targeted drug delivery vehicles. India's agricultural sector is emerging as a distinct and growing demand source, with government-approved nano-nutrient formulations including IFFCO's Nano Liquid Zinc and Nano Liquid Copper validating commercial deployment pathways for agrochemical nanotechnology. The energy sector, particularly electric vehicle battery technology, is attracting focused innovation activity from domestic nanotechnology firms, with Log9 Materials leading domestic commercialisation efforts in advanced battery chemistries.

## Competitive and Strategic Outlook

The competitive landscape is bifurcated between established multinational chemical and materials conglomerates and a nascent but dynamic cohort of indigenous Indian firms pursuing application-specific, localised innovation. Multinational players leverage established R&D infrastructure, global production scale, and supply chain depth, while domestic firms capitalise on proximity to local regulatory requirements, national priority alignment, and specific market needs in energy and environmental applications. BASF provides high-purity standardised nanoparticles and nanocomposite intermediates for coatings, performance chemicals, and automotive and construction sector applications. Evonik, Toray Industries, Merck Group, LG Chem, and Arkema represent the multinational competitive tier across materials, electronics, and pharmaceutical inputs. Log9 Materials is the most prominent indigenous competitor, focused on commercialising advanced battery and energy storage technologies using proprietary nanomaterial chemistries for electric vehicles and stationary power applications. Nanograf, Platonic Nanotech, and LHP Nanotech represent the broader domestic specialist cohort. Asian Paints' February 2024 acquisition of Nanova, a Mumbai-based self-disinfectant nanocoating company, signals the entry of large Indian industrial conglomerates into applied nanotechnology through targeted acquisitions.

## Key Takeaways

+357 96 030922
info@marketpublishers.com

The India nanotechnology market is at a pivotal stage of development, with foundational research investment translating progressively into commercial applications across healthcare, environmental management, electronics, agriculture, and energy. The convergence of national policy support through the Nano Mission, a large and growing pharmaceutical manufacturing base, and increasing private sector participation creates a multi-dimensional demand foundation for sustained growth through 2031. Participants that can address the scale-up cost barrier, navigate the CDSCO regulatory pathway for nanopharmaceuticals, and align product development with India's sectoral priorities in health, water, energy, and digital infrastructure will be best positioned to capture the market's expanding value.

Key Benefits of this Report

Insightful Analysis: Gain detailed market insights across regions, customer segments, policies, socio-economic factors, consumer preferences, and industry verticals.

Competitive Landscape: Understand strategic moves by key players to identify optimal market entry approaches.

Market Drivers and Future Trends: Assess major growth forces and emerging developments shaping the market.

Actionable Recommendations: Support strategic decisions to unlock new revenue streams.

Caters to a Wide Audience: Suitable for startups, research institutions, consultants, SMEs, and large enterprises.

What Businesses Use Our Reports For

Industry and market insights, opportunity assessment, product demand forecasting, market entry strategy, geographical expansion, capital investment decisions, regulatory analysis, new product development, and competitive intelligence.

Report Coverage

+357 96 030922
info@marketpublishers.com

Historical data from 2021 to 2024 and forecast data from 2026 to 2031

Growth opportunities, challenges, supply chain outlook, regulatory framework, and trend analysis

Competitive positioning, strategies, and market share evaluation

Revenue growth and forecast assessment across segments and regions

Company profiling including strategies, products, financials, and key developments

+357 96 030922
info@marketpublishers.com

# Contents

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

## 9. COMPANY PROFILES



## 10. APPENDIX

+357 96 030922
info@marketpublishers.com

## I would like to order

Product name: India Nanotechnology Market - Strategic Insights and Forecasts (2026-2031)
Product link: https://marketpublishers.com/r/IE9DC0AB2EB9EN.html
Price: US$ 2,850.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/IE9DC0AB2EB9EN.html