

# Editorial: China Accelerates Transformation

## Smart Manufacturing, Material Breakthrough & Global Expansion

社論：中國高端轉型加速，智能製造、材料突破到全球布局的產業升級

Over the past decade, global perceptions of China's fastener industry have largely remained anchored in "low cost, high volume, and standardized products." However, with the comprehensive upgrade of China's manufacturing sector, the explosive growth of the EV industry, and the rapid adoption of smart manufacturing technologies, **China's fastener industry is no longer confined to a low-end contract manufacturing role within the global supply chain. Instead, it is steadily moving toward higher value-added, technologically advanced, and globally integrated development.** Notably, this wave of transformation is not limited to isolated upgrades. It represents a structural shift encompassing factory equipment, material R&D, application markets, and overseas investment. For Taiwan's fastener industry, long recognized for its strengths in technology and quality, China's move upmarket is evolving from a phase of "catching up" into a new source of competitive pressure.

### Smart Factory Construction Gains Momentum

**One of the most visible changes in China's fastener industry in recent years is the rapid development of smart factories.** In the past, many Chinese plants were associated with labor-intensive operations and rudimentary management. Today, however, newly built facilities are benchmarking directly against European and American smart factory standards. From automated warehousing and MES systems to autonomous transport vehicles and digital production traceability, the scale of transformation is significant.

Hisener's smart factory serves as a representative example. It not only features highly automated production lines but also emphasizes digital management and real-time

production data, enhancing both efficiency and quality stability. Meanwhile, China's first intelligent production line for large-diameter, high-strength bolts has been launched in Chengdu. Utilizing a domestically developed hot forging technology, the line has improved production efficiency by 50%, marking a further breakthrough in China's capability to manufacture large, high-end fasteners.

**These investments reflect Chinese companies' strong ambition to move into high-end manufacturing.** In contrast, many small and medium-sized fastener manufacturers in Taiwan have yet to fully digitalize their processes, and equipment upgrades tend to be more conservative. While Taiwan has long led with stable quality and flexible manufacturing, Chinese players are rapidly closing the gap through bold, large-scale capital investments.

## China's Transformation

Smart  
FactoryHigh-end  
Material

EV

Overseas  
InvestmentRobot/  
Drone

In addition, China's support for smart manufacturing has evolved from fragmented local subsidies to centrally coordinated, large-scale industrial upgrade programs. These include equipment subsidies, digital transformation incentives, and the development of industrial parks, all of which are accelerating the industry's overall advancement. As a result, China's fastener industry is shifting from a cost-driven advantage to a more comprehensive edge built on efficiency, technology, and scale.

## Advancing High-end Material Development

Beyond manufacturing upgrades, China is actively pursuing breakthroughs in high-end materials. One example is Pangang Group's successful development of 1500 MPa ultra-high-strength, high-toughness titanium alloy wire rod. This achievement is significant because it meets the stringent requirements of aerospace fasteners.

Aerospace fasteners are widely regarded as the pinnacle of high-end fasteners, requiring not only exceptional strength but also lightweight properties, corrosion resistance, and fatigue durability. Historically, this segment has been dominated by a small number of suppliers from Europe, the United States, and Japan.

China's progress in ultra-high-strength titanium alloys indicates its gradual entry into high-value sectors such as aerospace, advanced defense, and new energy equipment. This represents more than a single material breakthrough—it signals a broader transition from "processing and manufacturing" to "materials technology." If China succeeds in building a comprehensive high-end materials supply chain, its impact on the global fastener market will be profound, as material capability ultimately defines the technological ceiling of an industry.

## EV Boom Creates Upgrade Opportunities

The rapid expansion of the global EV market has also become a key driver of China's fastener industry upgrade. Competition in China's EV sector has shifted from battery range to smart cockpits, autonomous driving, and integrated in-vehicle systems, leading to increased demand for specialized fasteners. Zhejiang Huayare Auto Parts has noted that rising demand for smart cockpit features has driven rapid growth in sales of high-precision, high-value customized fasteners. This indicates that Chinese fastener companies are no longer limited to supplying standard automotive components but are increasingly involved in next-generation vehicle design and system integration.

More importantly, China is the world's largest EV market, with vast domestic demand and a highly integrated supply chain. From BYD to Xiaomi Auto, and from batteries and electronic control systems to structural components, Chinese companies have built a highly localized ecosystem. This allows fastener manufacturers to participate quickly in product development and validation—a proximity advantage that export-oriented economies often lack. As China's new energy vehicle sector continues to expand, demand for high-end automotive fasteners will grow in tandem, further driving technological upgrades.



## Accelerating Overseas Expansion

Amid global supply chain restructuring and geopolitical risks, Chinese fastener companies are actively expanding overseas. For example, Shandong Tengda Fasten Tech has announced plans to invest RMB 200 million to establish a plant in Thailand. Chinese firms have also been actively exploring high-end manufacturing and new energy vehicle component markets in Malaysia to mitigate trade risks through Southeast Asian diversification.

Chinese automotive brands have also been rapidly gaining traction in South Africa, driving parallel growth in demand for automotive fasteners. As Chinese carmakers globalize, their fastener supply chains can “go global” alongside them. **This marks a shift from simple export activity to the establishment of overseas production bases, logistics hubs, and localized supply capabilities.**

### Rising Global Market Share

China’s export competitiveness in fasteners has improved significantly in recent years and is rapidly penetrating the Japanese supply chain. While the value of China’s fastener exports to Japan has remained relatively stable at around USD 330–340 million, its share by volume has exceeded 70%, indicating Japan’s growing reliance on Chinese supply. In contrast, Taiwan’s market share has been declining year by year. **Some Japanese industry players have begun to recognize that Chinese products are gradually replacing domestic suppliers,** raising concerns about a potential “China shock” over the next decade.

In Latin America, China is the largest fastener supplier to Brazil, Argentina, Chile, and Peru, and the second largest to Mexico, with market shares ranging from 20% to 35%. **China is steadily dominating the fastener import market across Central and South America.** Against the backdrop of U.S.-China tensions, its expansion in the region—accelerated during the Trump era—has intensified and continues to reshape global dynamics.

### AI Robotics and Drones Open New Markets


The rapid growth of China’s AI robotics and drone industries is creating new blue ocean opportunities for the fastener sector. Humanoid robots, industrial robots, and


low-altitude economy applications all require miniature, high-precision, and lightweight fasteners. The drone industry, in particular, relies heavily on aluminum alloys, titanium alloys, and specialized structural components, necessitating high-performance fastening solutions. **China is already a global hub for the drone industry, and with AI robotics designated as a national strategic priority, demand for related fasteners is expected to surge.** For Chinese fastener companies, early entry into these emerging supply chains offers the potential to secure higher margins and stronger technological positioning.

### Future Outlook for Chinese Fasteners

Overall, China’s fastener industry is shifting its focus from “manufacturing” to “technology.” Smart factories, advanced materials, EVs, global expansion, and AI-driven applications are collectively driving this transformation. However, challenges remain, including the establishment of a high-end brand image and geopolitical concerns surrounding reliance on Chinese supply chains. Looking ahead, several key opportunities stand out: further breakthroughs in aerospace and defense markets; new applications driven by the EV sector; and the development of localized manufacturing capabilities amid global supply chain restructuring. China’s fastener industry is evolving rapidly—and this transformation is only just beginning. ■


Copyright owned by Fastener World / Article by Dean Tseng





# FASTENER WORLD

YOUR GATEWAY  
TO GLOBAL BUYERS



**SERVICE :**

- B2B ADVERTISEMENT
- MATCHMAKING
- BRANDING
- GLOBAL EXHIBITION

▶ [WWW.FASTENER-WORLD.COM](http://WWW.FASTENER-WORLD.COM)

