Global-Proven TIPS Hollow Fiber Membrane Spinning Machine Featured at China Environmental Exhibition

Jiading, Shanghai Jan 4, 2026 (Issuewire.com**)** - Shanghai Trustech Technology Development Co., Ltd. responded to global environmental requirements for membrane durability and filter efficiency with their latest advancements in membrane fabrication at 19th IE Expo Shanghai (China Environmental Exhibition). At the center of this technical showcase lies the **Global-Proven TIPS Hollow Fiber Membrane Spinning Machine**, an industrial platform specifically designed for Thermally Induced

Phase Separation (TIPS). This equipment is specifically designed to process high-performance polymers such as PVDF by using high-temperature extrusion and controlled thermal gradients to form fibers with superior mechanical strength and high porosity. TIPS systems allow for the production of membranes capable of meeting the rigorous demands of industrial wastewater treatment and large-scale desalination applications, by integrating high capacity spinning lines with precision engineered components for manufacturing purposed. Trustech thus offers reliable manufacturing bases to environmental projects worldwide that require robust separation media.

Global Membrane Technology Trajectories and Industrial Trends

The international membrane industry is currently experiencing a period of structural transition, marked by the transformation from legacy fabrication methods to automated high-precision production techniques. As municipal and industrial sectors prioritize resource recovery and pollution control, demand for hollow fiber membranes has surged across water treatment, biotechnology, and chemical processing applications. Market analysis suggests that the global hollow fiber filtration market is experiencing substantial expansion, driven by an increasing preference for continuous manufacturing over batch processing. As part of this ongoing trend, equipment must be manufactured that can maintain mechanical stability and structural uniformity throughout 24-hour industrial production cycles, to meet the stringent purity requirements imposed on pharmaceutical and environmental sectors.

Technological demands from fields like carbon capture, seawater desalination and industrial wastewater zero-discharge (ZLD) are driving advances in polymers and resilient fiber structures for applications in these specialized fields. Industry trends emphasize manufacturing solutions that reduce material waste while optimizing energy consumption during phase inversion processes. Global manufacturing trends indicate an increasing inclination toward high-value technological innovation, and industrial systems with real-time monitoring and extreme mechanical precision. Such equipment prioritizes components with uniform pore structures to help maintain high rejection rates and prolonged operational lives in challenging environmental applications.

Strategic Role of Trustech at the 19th IE Expo Shanghai

Trustech Technology used the 19th China Environmental Exhibition (IE Expo) as an invaluable opportunity to demonstrate their dedication to raising standards of membrane production. Trustech successfully introduced their FCT 5th Generation Hollow Fiber Membrane Spinneret at this event, marking an enormous advancement in micro-manufacturing technology. The FCT series is purposefully engineered to work in concert with high-output spinning machines, featuring advanced internal geometries to optimize polymer dope flow and address common industry concerns such as fiber eccentricity - guaranteeing uniform wall thickness and consistent filtration properties across each batch of membranes produced.

The International Environmental Expo (IE Expo) in Shanghai has become Asia's premier environmental trade fair, serving as an elite platform where domestic and global market leaders gather to present solutions in water, waste, and soil management. Trustech utilized this exhibition as an opportunity to engage with local authorities and industrial stakeholders searching for localized manufacturing solutions to contribute to global green transformations. By exhibiting its global-renowned TIPS Hollow Fiber Membrane Spinning Machine alongside recent spinneret innovations, the company provided an integrated production solution. Their presence at such an important international venue reinforces precision engineering's role in meeting structural integrity and performance benchmarks required for environmental infrastructure in the future.

3. Core Competencies and Strategic Application Scenarios

As a National High-Tech Enterprise, Trustech applies an advanced R&D framework that emphasizes structural analysis, precision mechanical engineering, and thermodynamics-focused innovation. Backed by more than 40 authorized patents, Trustech is recognized as China's first professional company to achieve structural analysis and mass-production application of 32-hole TIPS spinnerets. Its engineering standards deliver exceptional accuracy, with component concentricity reaching 0.003 mm and inter-process clamping accuracy maintained below 0.002 mm, effectively eliminating structural defects that could compromise membrane performance. Building on this foundation, Trustech's upgraded SpinMaestro 2.0 spinning system integrates advanced subsystems—including the SteadyiCore Ultra 2.0 heating, TitanMix Pro 4.0 mixing, PrimeGlider Pro 3.0 automatic pay-off, SmartCoil Elite 3.0 automatic winding, and StoutDrive 2.0 motor drive configuration—to significantly enhance precision and operational stability, reducing commissioning and production downtime and increasing overall spinning efficiency by 11.4% compared with previous designs.

Trustech technologies play a critical role in protecting global health and the environment. Their equipment is used for tasks such as:

Municipal and Industrial Wastewater Treatment Trustech systems are instrumental in creating high-strength membranes for MBR (Membrane Bio-Reactor) systems, allowing for efficient effluent recycling and the protection of water resources.

Medical and Pharmaceutical Filtration The technology supports the manufacturing of membranes essential for hemodialysis and artificial lungs (ECMO), where mechanical consistency is a life-saving requirement for blood-contacting applications.

Gas Separation and Energy Efficiency Specialized fiber geometries produced by Trustech machines support nitrogen generation, hydrogen recovery, and carbon capture initiatives, aiding the global transition to cleaner energy and more efficient chemical processing.

Trustech boasts technical presence in 39 countries - such as the UK, France and Singapore--and serves over 630 customers. Their AAA-level credit rating and active membership of Membrane Industry Association of China provide them with an outstanding track record as reliable strategic partners. Furthermore, through Enterprise-Academics-Research cooperation agreements such as Changchun Industry University Trustech continues to bridge laboratory scale research with high volume industrial production production, providing infrastructure essential for creating a more resource efficient future.

Conclusion: Progressing Environmental Infrastructure

At the China Environmental Exhibition, Trustech demonstrated its dedication to mechanical integrity and operational transparency by unveiling their global-proven TIPS Hollow Fiber Membrane Spinning Machine. Integrating precision engineering with innovative machine design has helped Trustech tackle global production challenges such as consistency and scalability with membrane production. At IE Expo they showcased their new FCT 5th Generation Spinneret that continues to advance industry standards through continuous technological refinement.

As industries move towards more eco-friendly and high-performance filtration media, global-proven manufacturing systems remain essential components of global health and clean water infrastructure. Trustech remains dedicated to supporting the global membrane industry with tools necessary for solving even its most challenging separation challenges. By adhering to stringent manufacturing excellence

standards and maintaining an international perspective, they ensure advanced membrane technology benefits are accessible worldwide.

For more information regarding technical specifications, product portfolios and corporate developments please visit Xtrustech's official website: https://www.xtrustech.com/

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