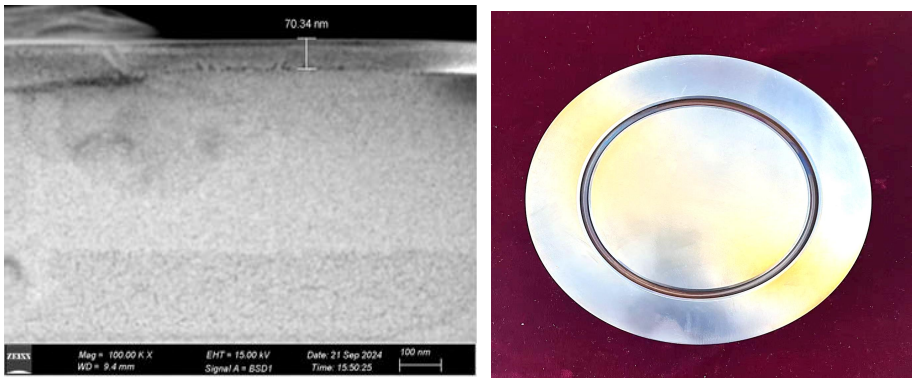
TGRI-FS Low-Friction and Ultra-Wear-Resistant Nano-Diamond Coating

1.Product Introduction

TGRI-FS is a nano-diamond coating material engineered with low friction and ultra-high wear resistance, specifically developed for moving components in petroleum refining equipment. It is designed to mitigate the degradation of moving and sliding parts operating under severe conditions involving high temperature, corrosion, and mechanical wear in oil and gas refining systems. Additionally, the coating exhibits anti-fouling and anti-waxing properties. This product is suitable for protecting critical equipment components against damage in diverse applications characterized by friction, wear, and corrosion.



Nano-diamond coating and coated Vibrating screen bearing component products

2. Advantages

(1) Low Cost and High Performance

- **Cost-Effectiveness**: The manufacturing cost is lower compared to conventional metallic and organic coatings.
- **Superior Performance**: Exhibits an exceptionally smooth surface (Ra < 0.1 nm), high hardness (≥ 5000 HV), and a low friction coefficient (< 0.1).
- **Corrosion resistance:** resistant to acid and alkali.
- **Scalable Fabrication:** Enables batch production with consistent and reliable product performance.

(2) Economic and Environmental Sustainability

- **Enhanced Cost Efficiency**: Significantly reduces production costs, offering exceptional value.
- **Environmental Friendliness**: Composed solely of carbon-based material, posing no risk of environmental pollution.
- **Extended Service Life**: More than doubles the component lifespan while demonstrating outstanding resistance to harsh environments

3. Application

1. **Wear Resistance Applications**: Protection of moving and sliding components subjected to friction and wear in oil and gas refining equipment.
2. **Friction and Drag Reduction**: Reduces fluid transport friction resistance by 20-30%, particularly beneficial for conveying media with high viscosity.
3. **Anti-Fouling and Anti-Waxing Applications**: Utilization in environments susceptible to wax deposition and scale formation.