



## The Application of PEEK in the Petrochemical Industry

Integrity / Pragmatism / Cooperation / Innovation / Win-win

**JiangSu JunHua HPP Co., Ltd.**

## Company Profile



Jiangsu Junhua HPP specialize in the application, R&D and production of high performance special engineering plastic (PEEK, PI bar, tube and sheets etc) and machining of finished parts. We have formed a complete industrial chain with PEEK raw material resin polymerization, modified granulation, machining of finished parts and continuous extrusion of materials such as bar, tube and sheets.

Jiangsu Junhua HPP have cooperated with Saudi, PetroChina, Sinopec, Petroleum University, Xi An..., we supply PEEK support sealing ring, PEEK end plug, PEEK insulation cable frame, PEEK polar plate, PEEK insulated line, PEEK spacer ring, PEEK bezel, PEEK wear-resistant bush...for customer.

High-temperature wear resistance bush, insulation cable frame, end plug and other high performance plastic parts are made of PEEK and its modified composite material, can replace cooper alloy, stainless steel, PTFE, general engineer plastic, graphite...and other traditional material, meet the strict demanding technical requirement of oil logging and mining equipment for parts that are resistant to wear, high temperature, high strength, oil-free lubrication, acid and alkali corrosion, and high reliability, reduce operating cost and facilitate continuous production at maximum capacity.



Wear  
Resistance



260°C  
High Temperature  
Resistance



High Strength



Self-Lubrication



Corrosion  
Resistance



Impact  
Resistance

## Product Display

Our PEEK polymers and composites high performance plastic parts are widely applied to down hole measurement, oil extraction, petrochemical equipment production and transportation.

### 01 PEEK applied to sealing: Reliable Sealing Solutions

- ◆ 100% strength retention after 1000 hours at 175°C in seawater, hydrocarbon, and 100% hydrogen sulfide gas environment
- ◆ Double the pressure resistance than PTFE
- ◆ 300 times higher creep resistance than PTFE
- ◆ 18 times higher compression creep resistance than PTFE
- ◆ Replace metal spring, reduce the risk of contact with the well wall due to worn seals



In some industry, including oil&gas industry, the primary application of PEEK is supply mechanical support for softer sealing materials, such as elastomer and fluoropolymers. While in other industry, PEEK's properties make it ideal for use as a primary seal.



/ PEEK Support Sealing Ring /



/ PEEK Valve Seat /



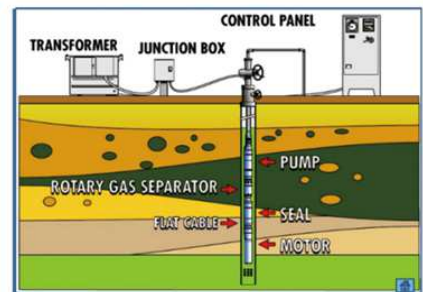
/ PEEK Piston Ring /

## 02 PEEK application to ESP (Electric Submersible Pump)

- ◆ Excellent resistance to high temperature, excellent insulation even at 250°C
- ◆ Maintain high mechanical strength even at 250°C
- ◆ Long-term exposure to high temperature of 200°C and high pressure of 140MPa, still maintains high reliability



/ PEEK Insulation Cable Frame /



Stator Winding Insulation Ring

Power Cable Plug

## 03 PEEK apply to log instrument: Excellent wear resistance and insulation

- ◆ Long-term exposure to high temperature of 200°C and high pressure of 140MPa, still maintains high reliability
- ◆ Work as insulator, can be used for a long time without corrosion in the high temperature and strong acidic medium( such as  $H_2S$ ,  $SO_2$ ) in the well
- ◆ Unique combination of wear resistance, chemical resistance, mechanical strength, and stable electrical properties over its entire operating range, which helps maintain the integrity of collected data while with less electrical interference.



/ Centralizer /



/ Drilling Pipe Protector /

04

## PEEK apply to connectors: Improve the overall performance of down hole connectors

- ◆ Double the lifetime compared to Glass- Ceramic connectors
- ◆ Double the electrical power transmission capacity compared to Glass- Ceramic connectors
- ◆ Outstanding insulation guarantees no leakage of electricity
- ◆ Outstanding resistance to corrosive liquids and gaseous environment
- ◆ PEEK polymer' s high purity and strength allow for thinner wall sections in more compact connectors,performs excellent even in tight space
- ◆ Can withstand typical fluids of oil&gas industry, include seawater mineral oil silicone oil and hydraulic fluids, also suitable for H2S acid gas wells.PEEK performance far exceeds Norsok M-710 standard, while this standard is the significant norm of oil&gas industry.



/ Plug-in connector /

05

## Application to ESP (Electric Submersible Pump)



/ PEEK Preventing Slider /



/ PEEK Preventing Bear Slider /



/ PEEK End Plug /

06

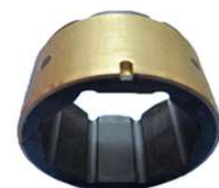
## Application to Valve



/ PEEK Valve Stem Guide Sleeves /



/ PEEK Prevent Gasket /



/ PEEK Valve Stem Wear Bushing /

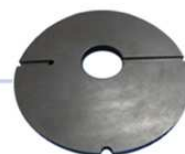
## 07 Application to Chemical Pump



/ PEEK Insulation sleeves for Magnetic Pump /



/ PEEK Blade /



/ PEEK End Support Seal Block /

## 08 PEEK Plunger Seal Boots



/ PEEK Distribution Plate /

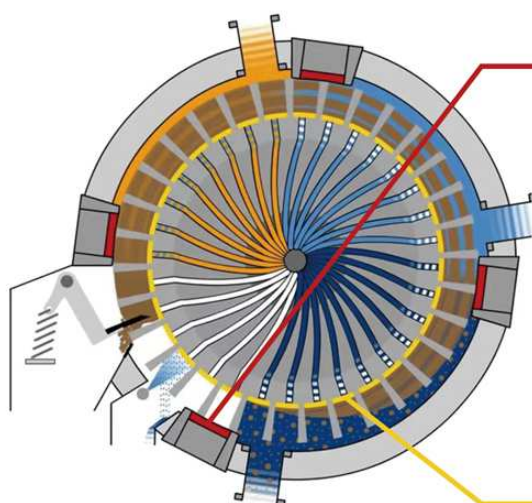


/ PEEK Plunger Seal Boots /

Schematic Diagram



## 09 PTA(Purified Terephthalic Acid)



/ PEEK Isolation Block /



/ PEEK Support Mesh /





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