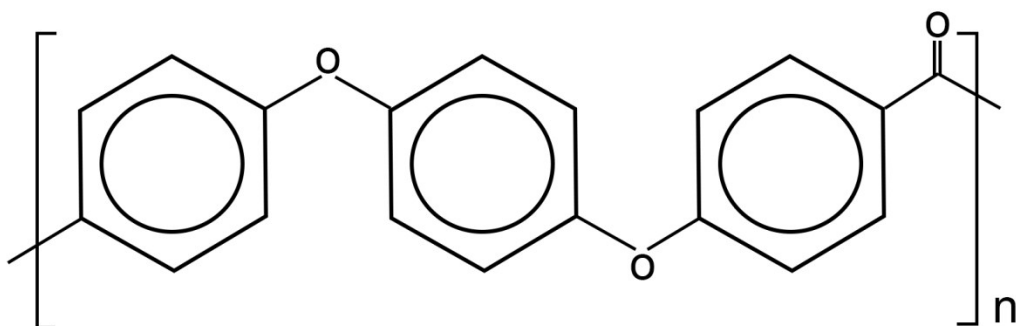


A The chemical structure of PEEK



B The characteristics of the PEEK (Zeniva ZA-500)

Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in³	ASTM D792
Viscosity	440000 cP @Temperature 400 °C	440000 cP @Temperature 752 °F	1000/s

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	≥ 90.0 MPa	≥ 13100 psi	ASTM D638
Tensile Modulus	3.40 GPa	493 ksi	ASTM D638
Izod Impact, Notched	≥ 0.800 J/cm	≥ 1.50 ft-lb/in	ASTM D256

Figure S1. The chemical structure and characteristics of PEEK.

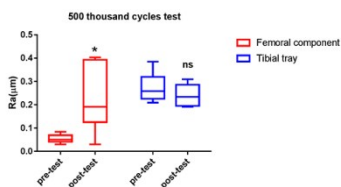


Figure S2. Results of 500000 cycles test in vitro tribological changes: the surface of the PEEK component tended to be rougher, while that of HXLPE tended to be smoother.

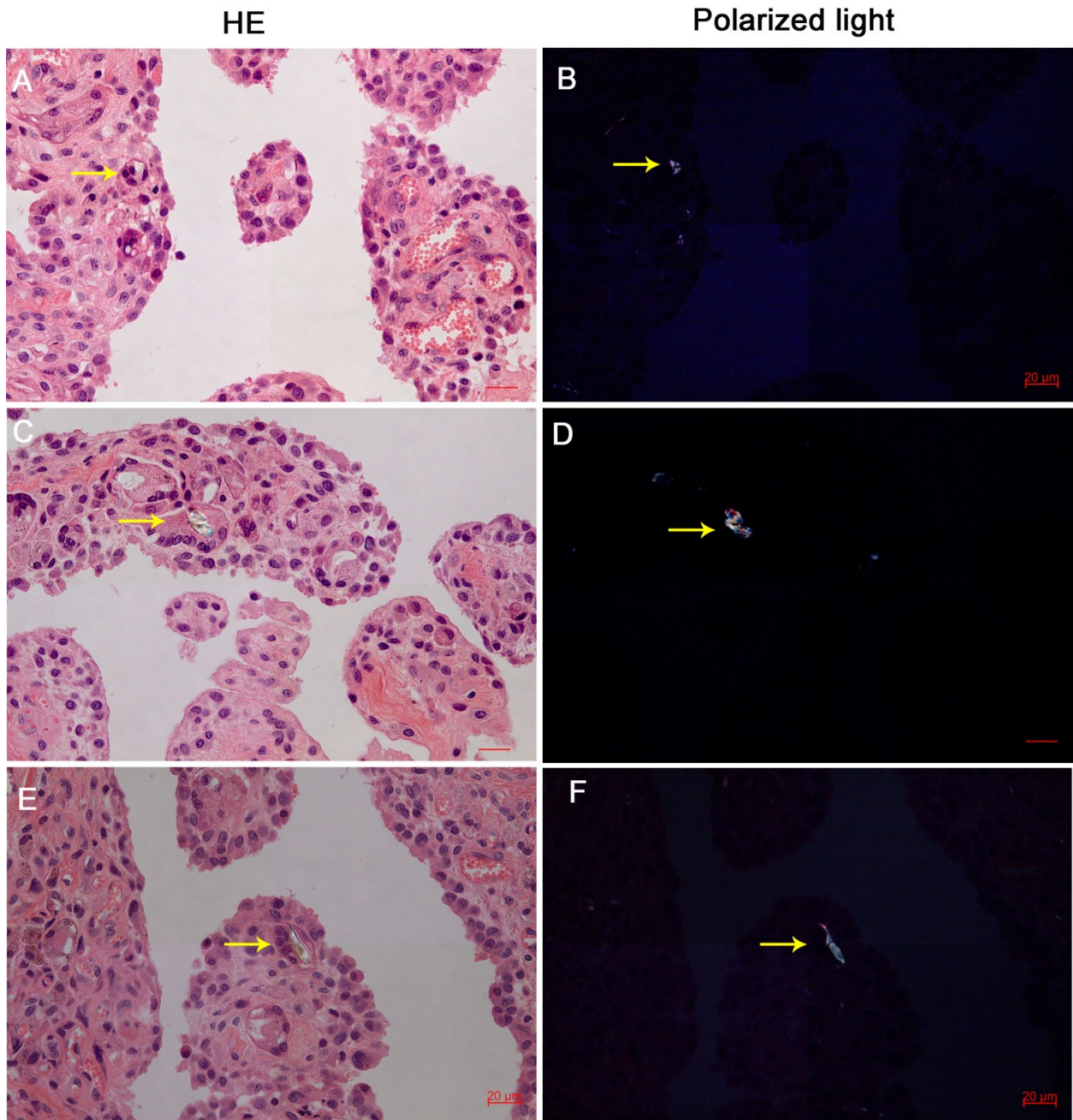


Figure S3. The wear particles were engulfed and surrounded by macrophagocytes; the yellow arrows indicate particles. Scale bars = 20 μm .