

Supporting Information

Femtosecond Laser Optimization of PEEK: Efficient Bioactivity Achieved by Synergistic Surface Chemistry and Structures

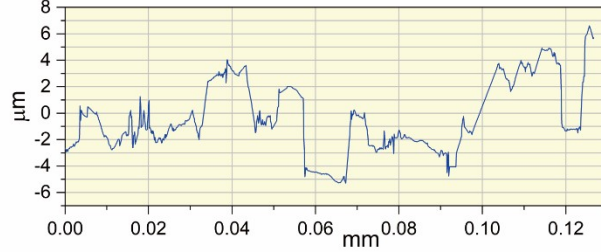
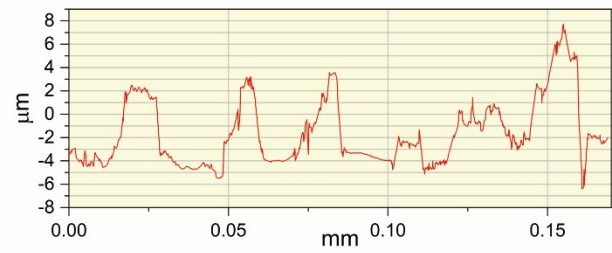
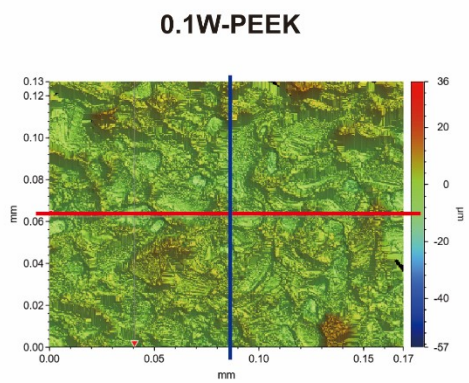
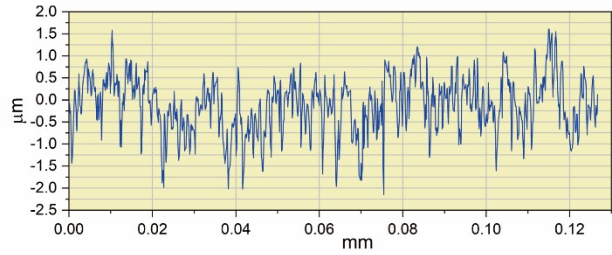
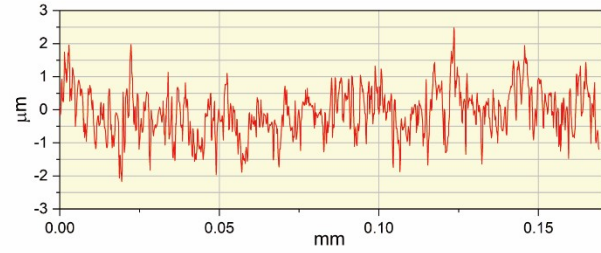
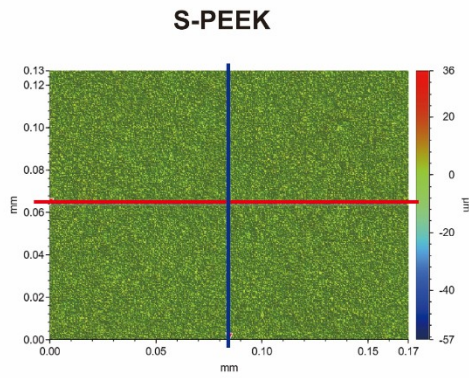
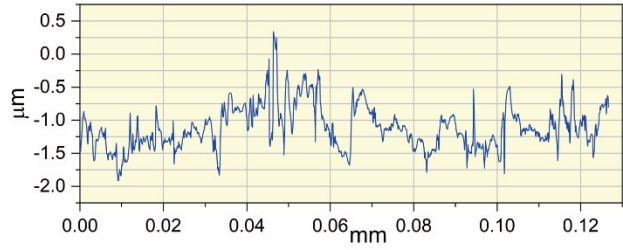
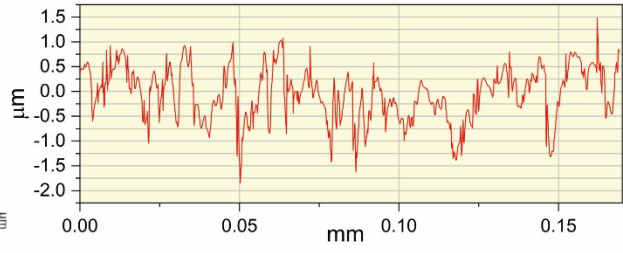
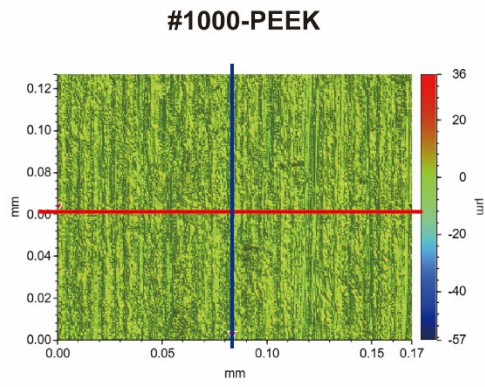
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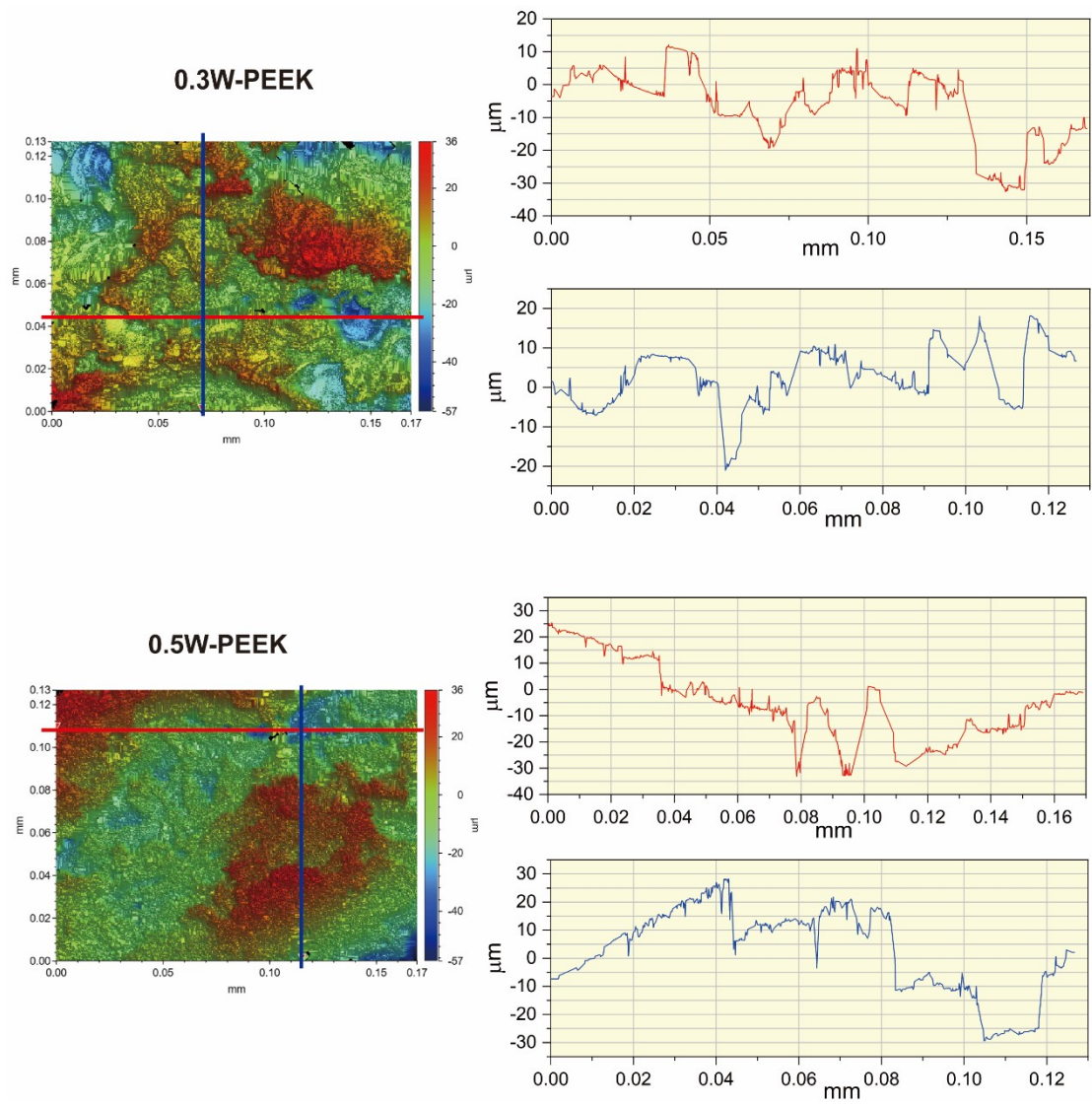


Figure S1. Sample ridge shape profiles and depth acquired from optical profilometry.

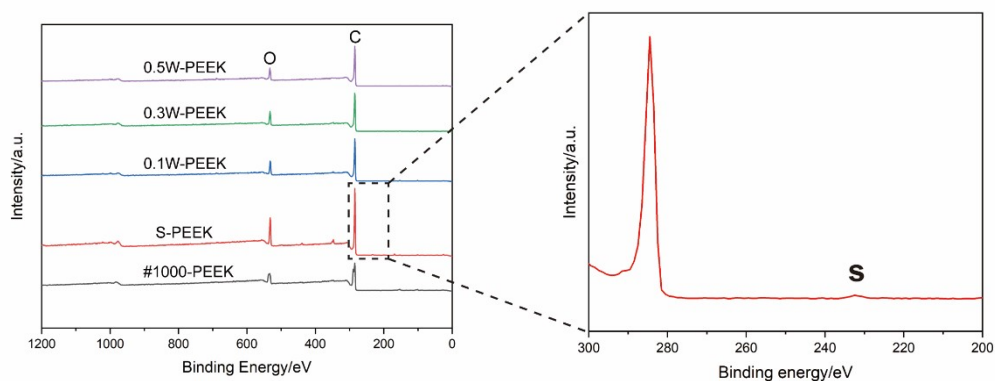
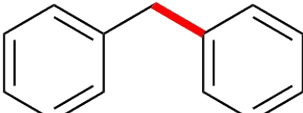
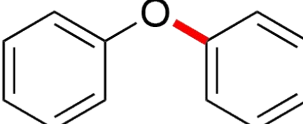


Figure S2. XPS spectra of the S-PEEK samples with local magnification

Table S1 The bond dissociation energies (BDE) of C-C single bond and C-O single bond in PEEK

Structure	Solvent	BDE (kJ/mol)	Method	Ref.
	Gas	91.7±2	Der.	86P ¹
	Gas	78.1±1	Der.	86P ¹

*Der. (Derivation from standard molar enthalpy of formation)

* The relevant data and results in the table are obtained from internet Bond-energy Databank (iBonD 2.0 Version). The detailed URL is as follows:
<http://ibond.nankai.edu.cn/>

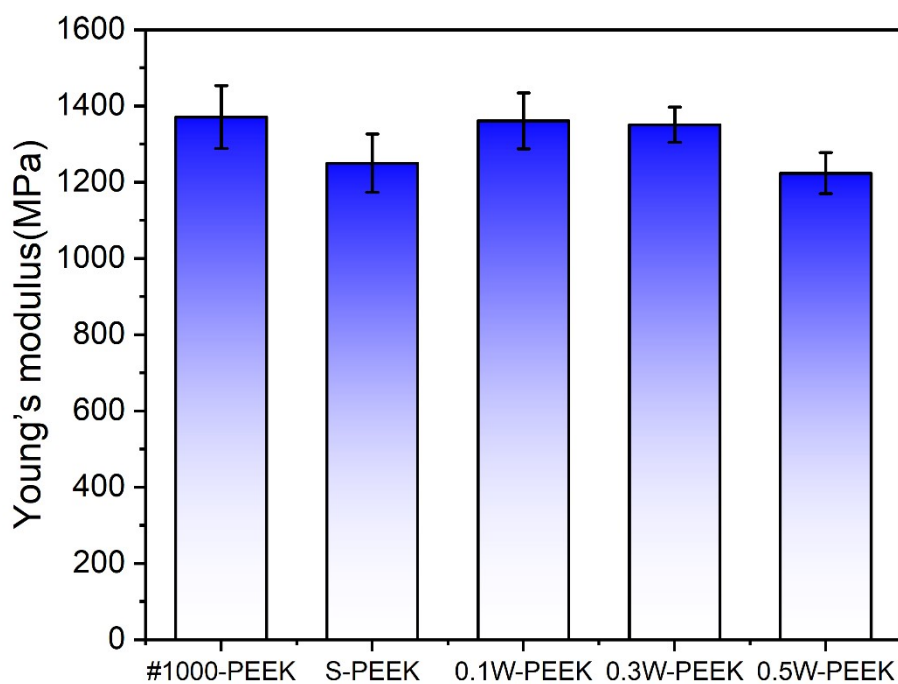


Figure S3. Young's modulus of PEEK surfaces after modifications were measured by Universal material Testing Machine. The results show that FSL has little effect on the mechanical properties of PEEK surfaces.

References

- (1) Pedley, J. B.; Naylor, R. D.; Kirby, S. P. Thermochemical Data of Organic Compounds. *Chapman Hall* **1986**.