

Supplementary figures of “Heparin enriched-WPI coating on Ti6Al4V increases hydrophilicity and improves proliferation and differentiation of human bone marrow stromal cells”

**Davide Facchetti<sup>1,3\*</sup>, Ute Hempel<sup>2</sup>, Laurine Martocq<sup>1</sup>, Alan M. Smith<sup>4</sup>, Andrey Kopytug<sup>5</sup>, Roman A. Surmenev<sup>6</sup>, Maria A. Surmeneva<sup>6</sup>, and Timothy E.L. Douglas<sup>1,7\*</sup>**

<sup>1</sup> Engineering Department, Lancaster University, Lancaster, United Kingdom;

<sup>2</sup> Institute of Physiological Chemistry, Technische Universität Dresden, Germany;

<sup>3</sup> Department of Chemistry, Molecular Sciences Research Hub, Imperial College London, United Kingdom;

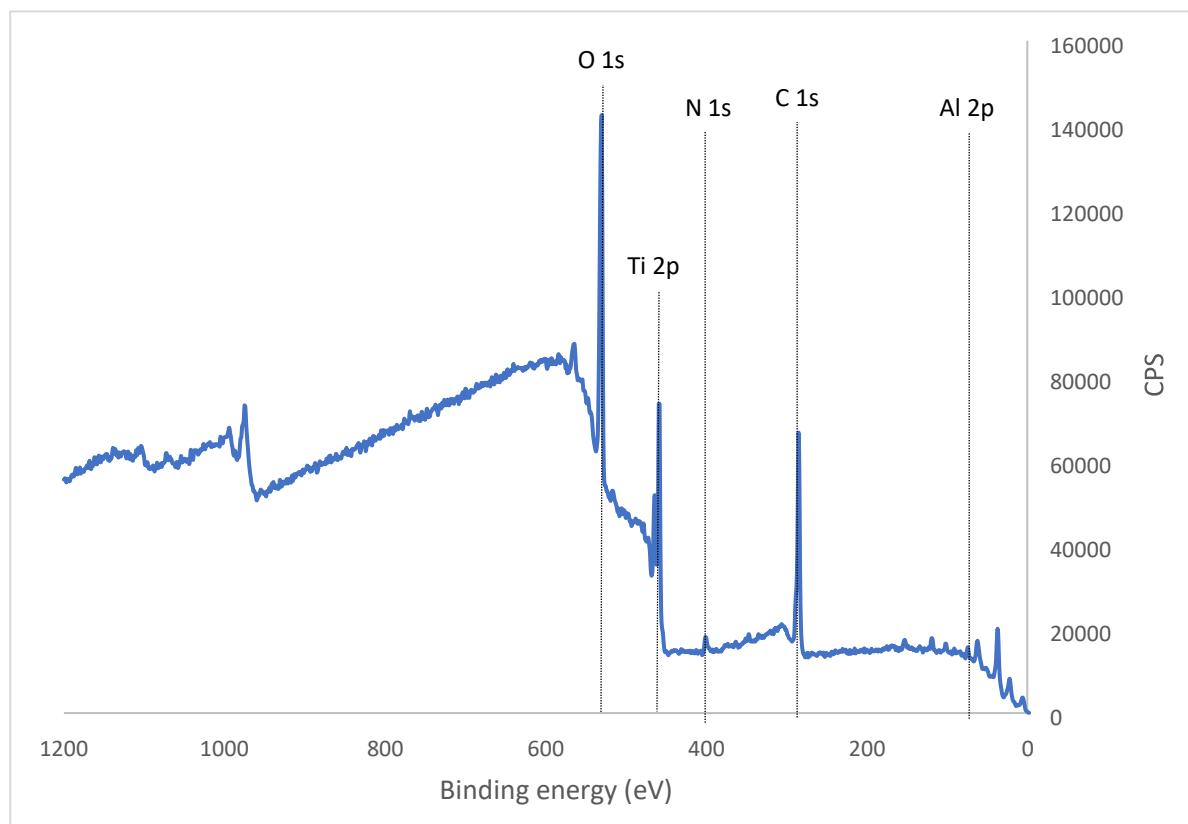
<sup>4</sup> Department of Pharmacy, School of Applied Sciences, University of Huddersfield, United Kingdom;

<sup>5</sup> Department of Quality Technology, Mechanical Engineering & Mathematics, Mid Sweden University, 831 25 Östersund, Sweden;

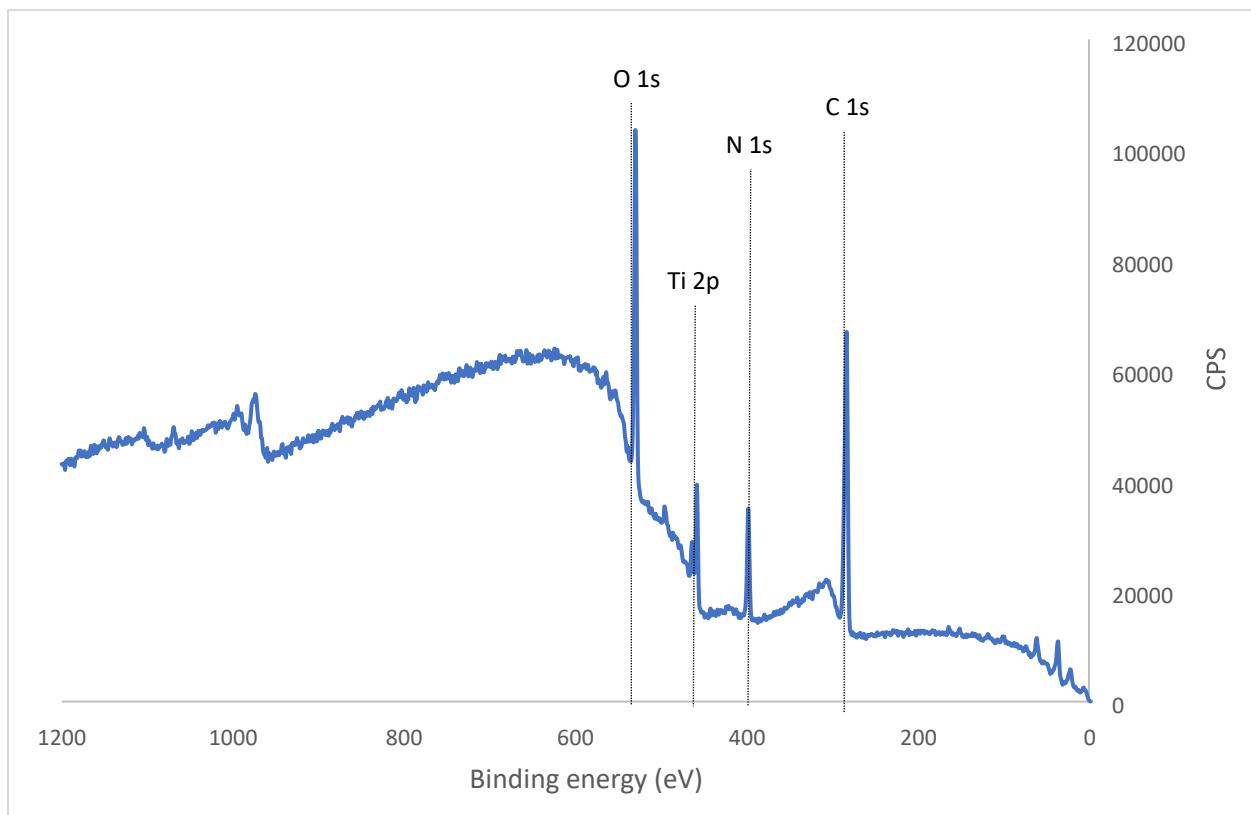
<sup>6</sup> Physical Materials Science and Composite Materials Centre, Research School of Chemistry & Applied Biomedical Sciences, National Research Tomsk Polytechnic University, 634050 Tomsk, Russia;

<sup>7</sup> Materials Science Institute (MSI), Lancaster University, United Kingdom

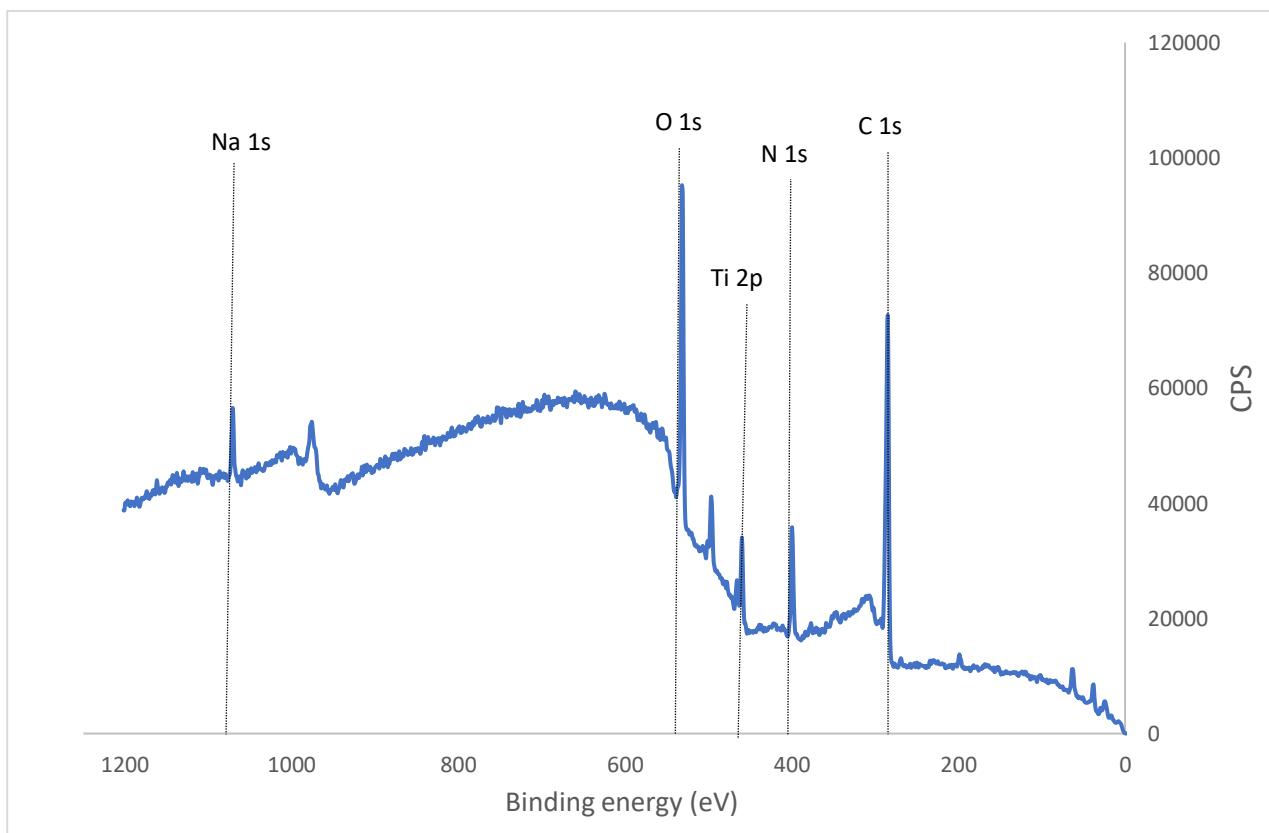
Correspondence: \* D.F: [d.facchetti21@imperial.ac.uk](mailto:d.facchetti21@imperial.ac.uk); T.E.L.D: [t.douglas@lancaster.ac.uk](mailto:t.douglas@lancaster.ac.uk)



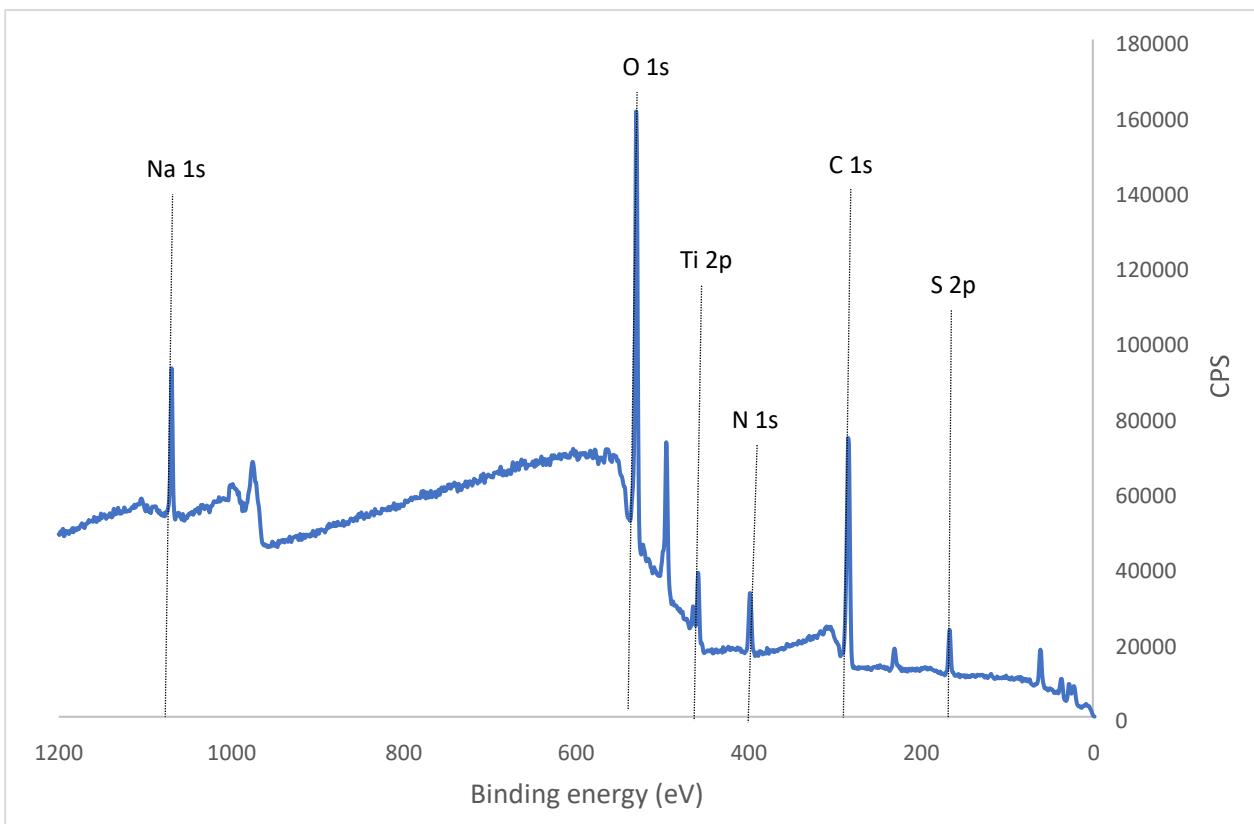
**Supplementary Figure S1.** XPS Survey spectrum of bare Ti6Al4V (Uncoated sample)



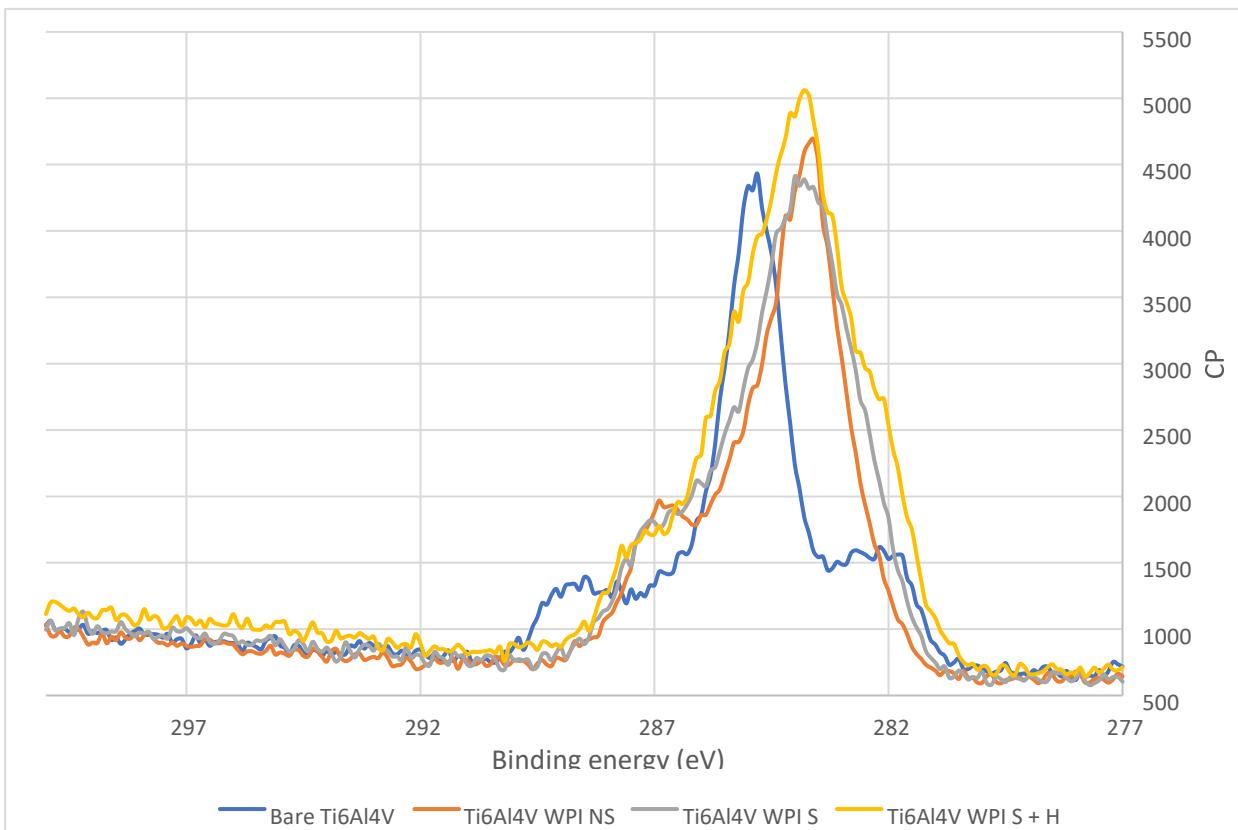
**Supplementary Figure S2.** XPS Survey spectrum of Ti6Al4V WPI coated NS



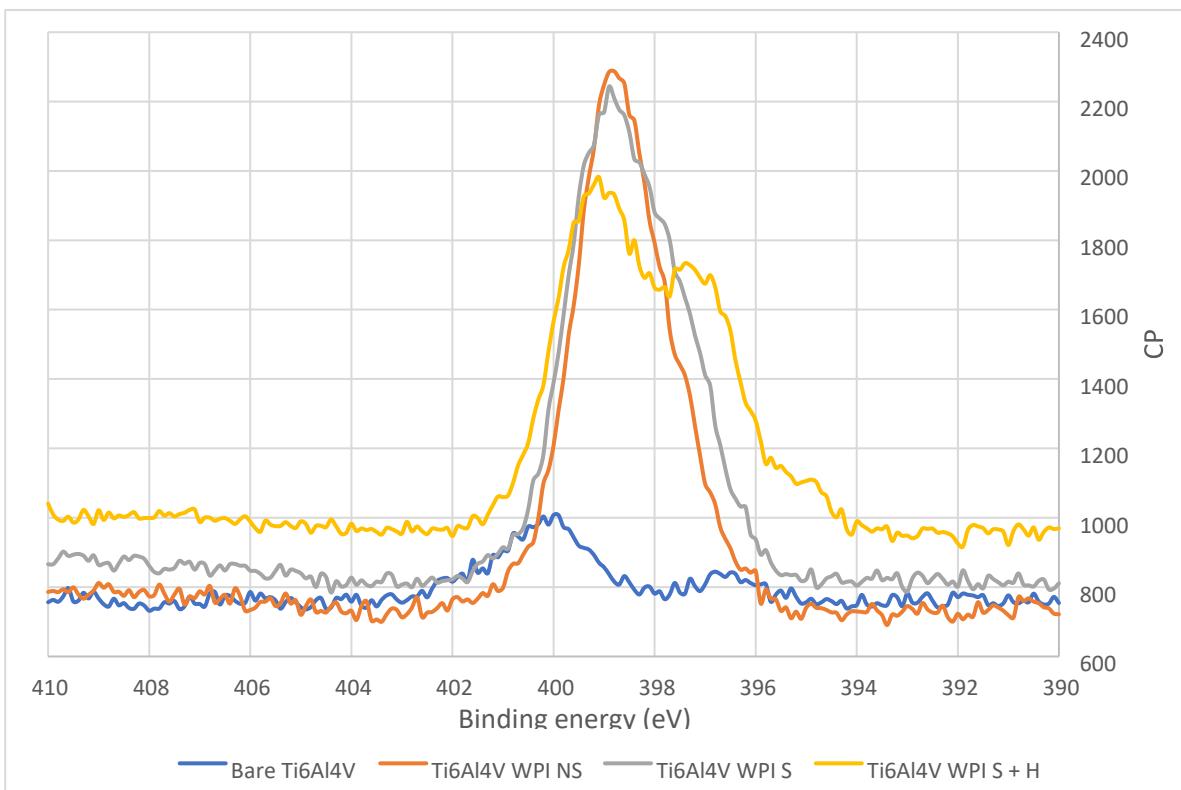
**Supplementary Figure S3.** XPS Survey spectrum of Ti6Al4V WPI Coated S



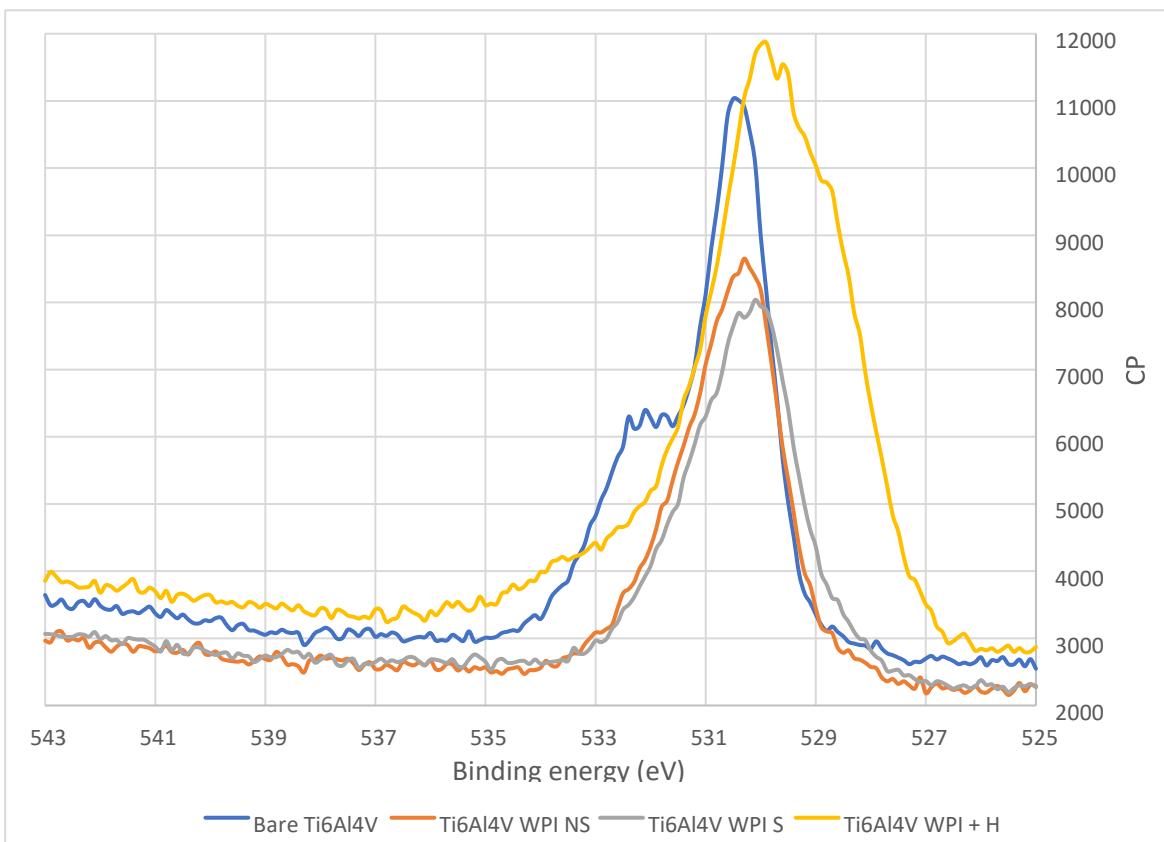
**Supplementary Figure S4.** XPS Survey spectrum of Ti6Al4V WPI Coated S + H



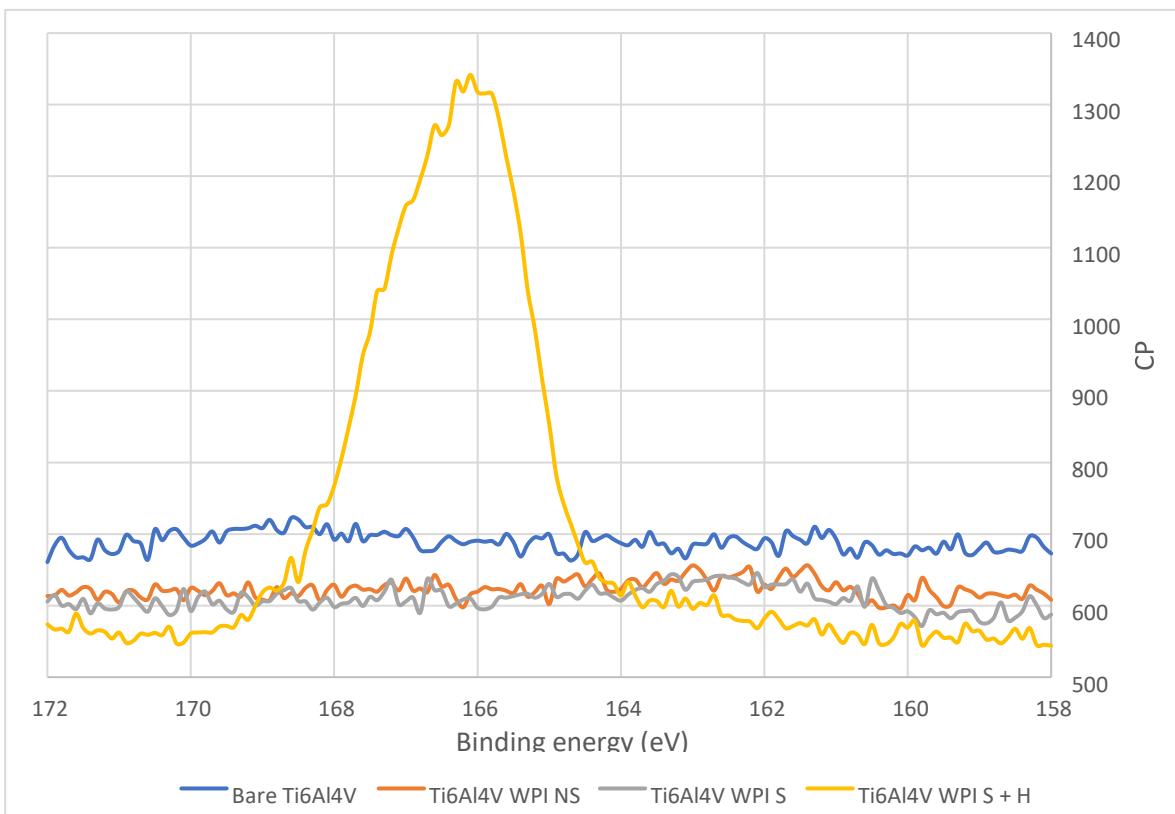
**Supplementary Figure S5.** XPS high resolution spectrum of Carbon



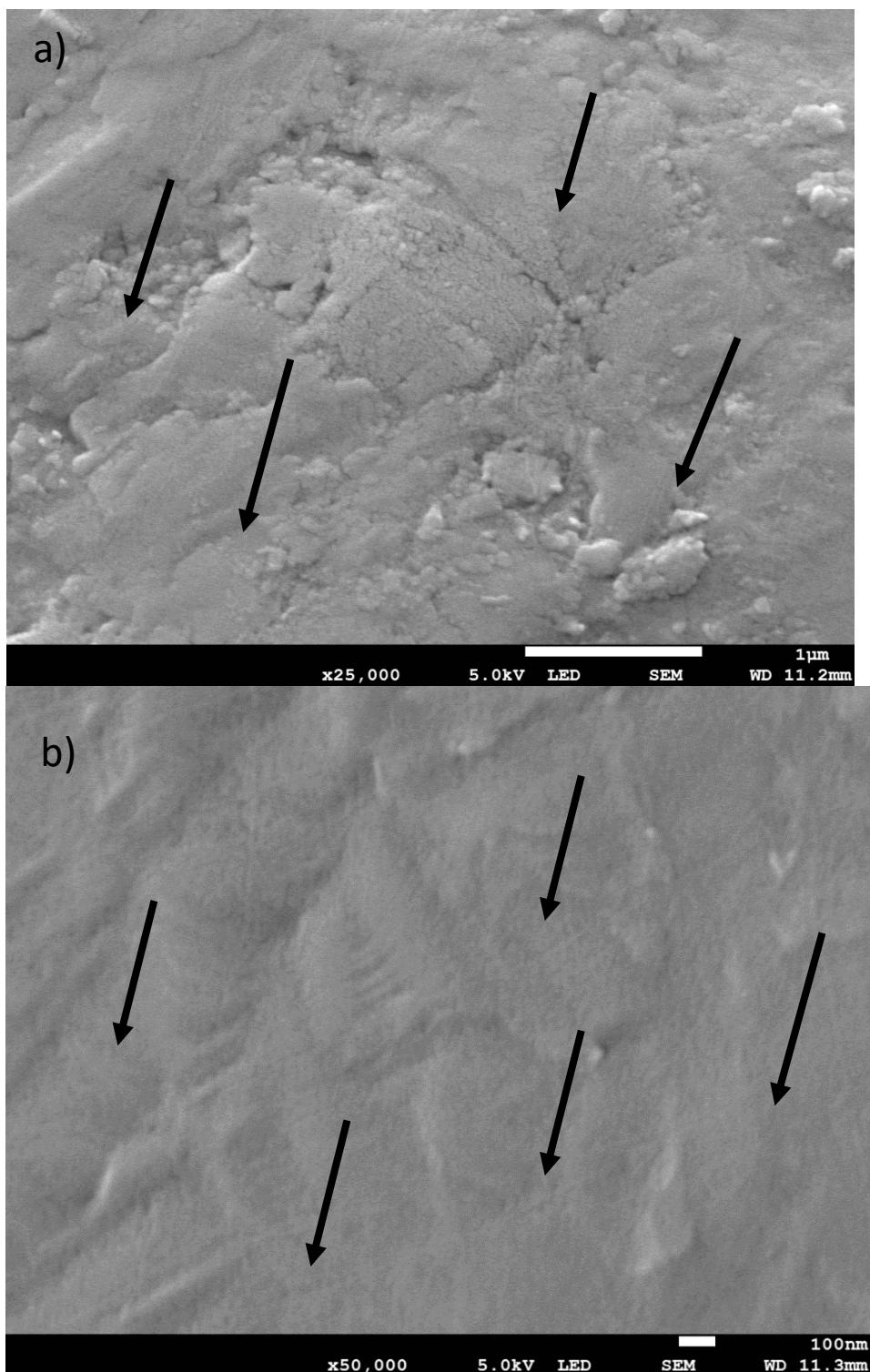
**Supplementary Figure S6.** XPS high resolution spectrum of Nitrogen



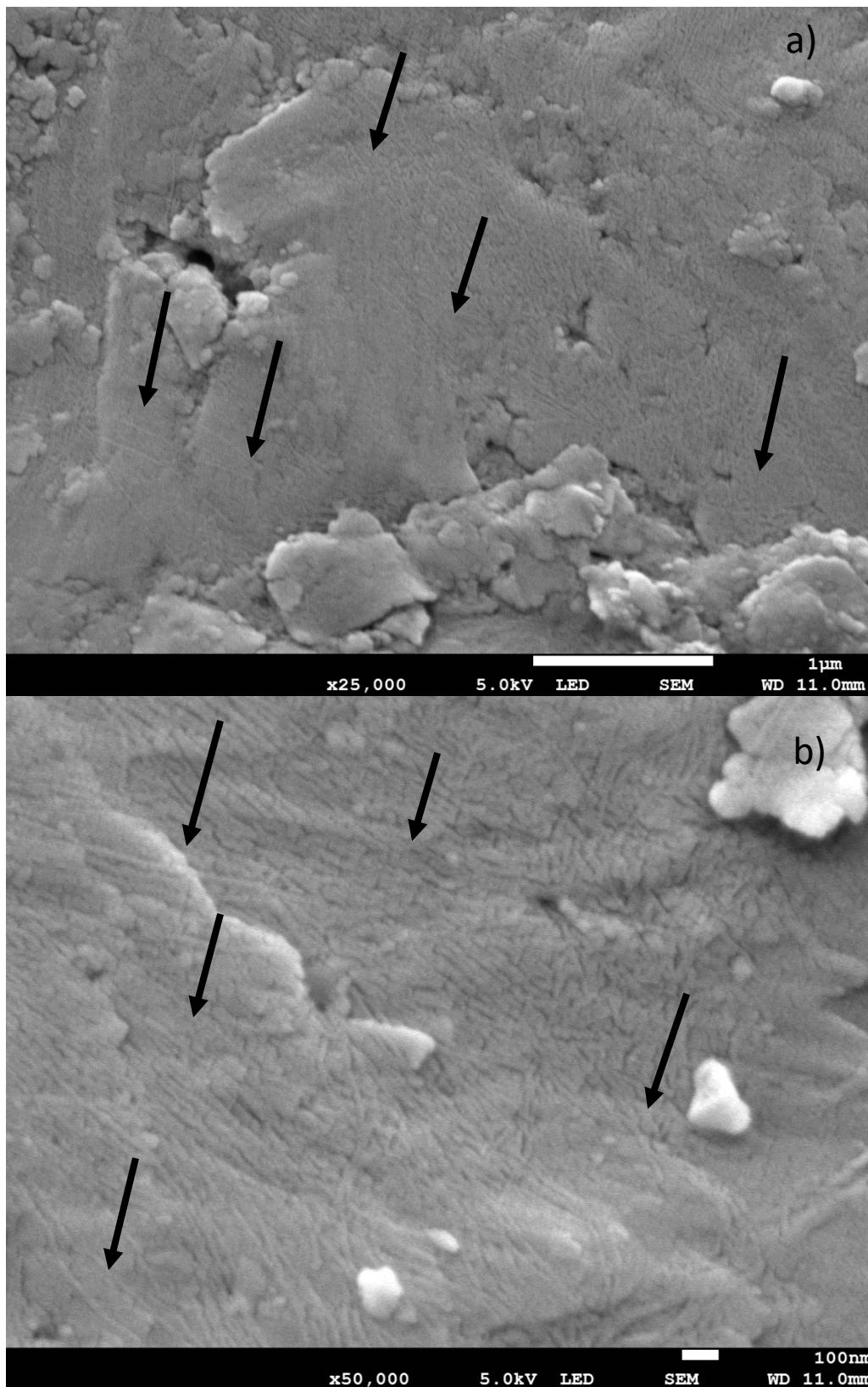
**Supplementary Figure S7.** XPS high resolution spectrum of Oxygen



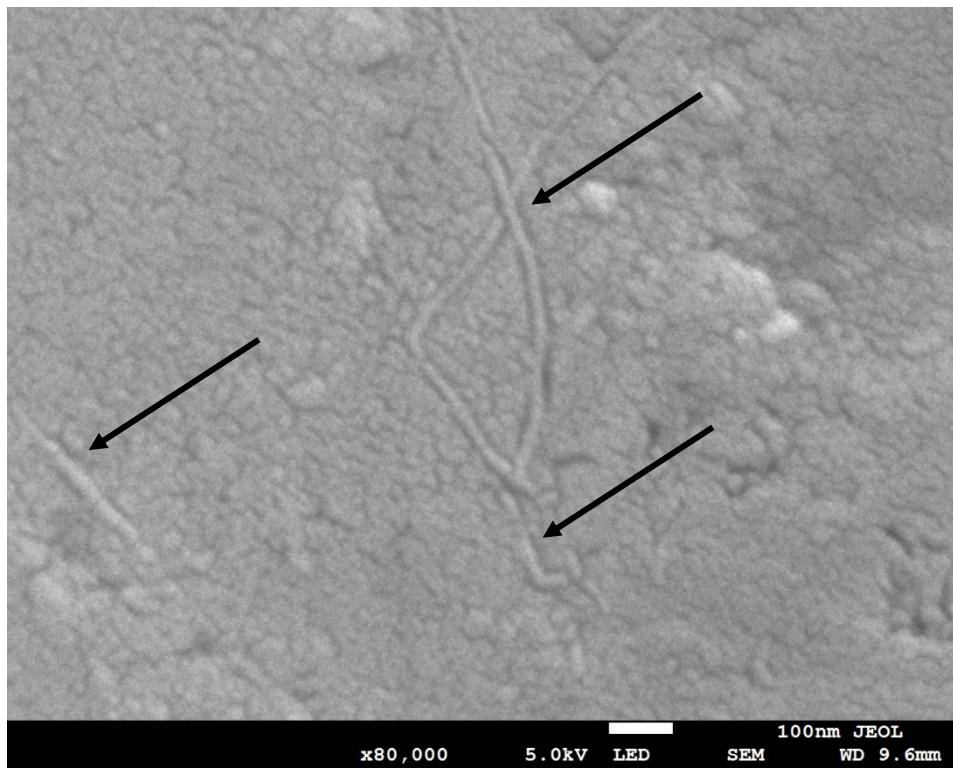
**Supplementary Figure S8.** XPS high resolution spectrum of Sulfur



**Supplementary Figure S9.** SEM images of Ti6Al4V Coated S + H. Black arrows indicate WPI fibrils. No clear evidence of heparin. At both 25000 (a) and 50000 (b) magnification respectively.



**Supplementary Figure S10.** SEM images of Ti6Al4V Coated S + T. Black arrows indicate WPI fibrils. No clear evidence of tinzaparin. At both 25000 (a) and 50000 (b) magnification respectively.



**Supplementary Figure S11.** SEM images of Ti6Al4V coated NS at 80000x magnification. Black arrows indicate WPI fibrils