

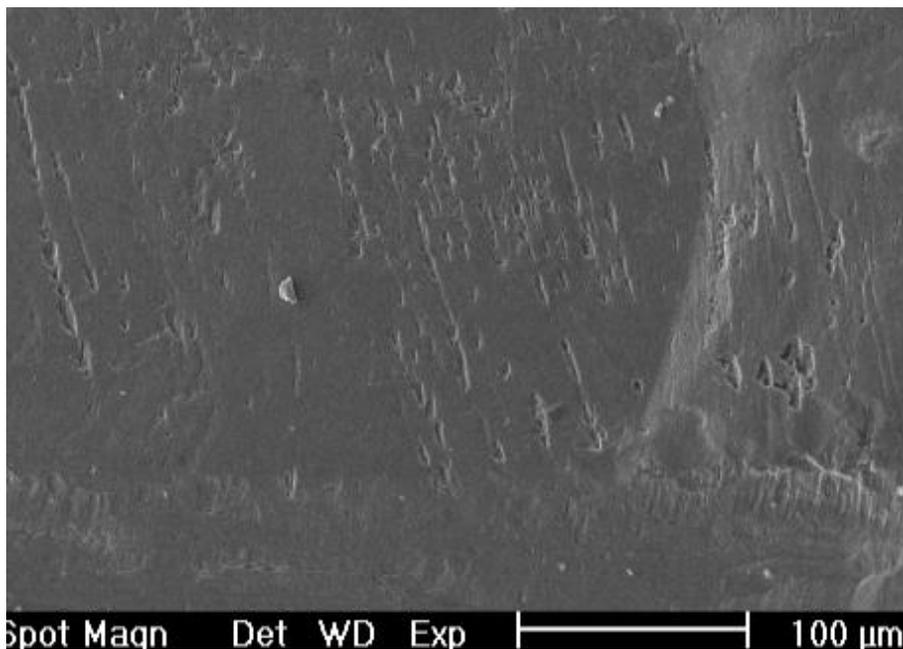
Supplementary Information

1. Supplementary Tables

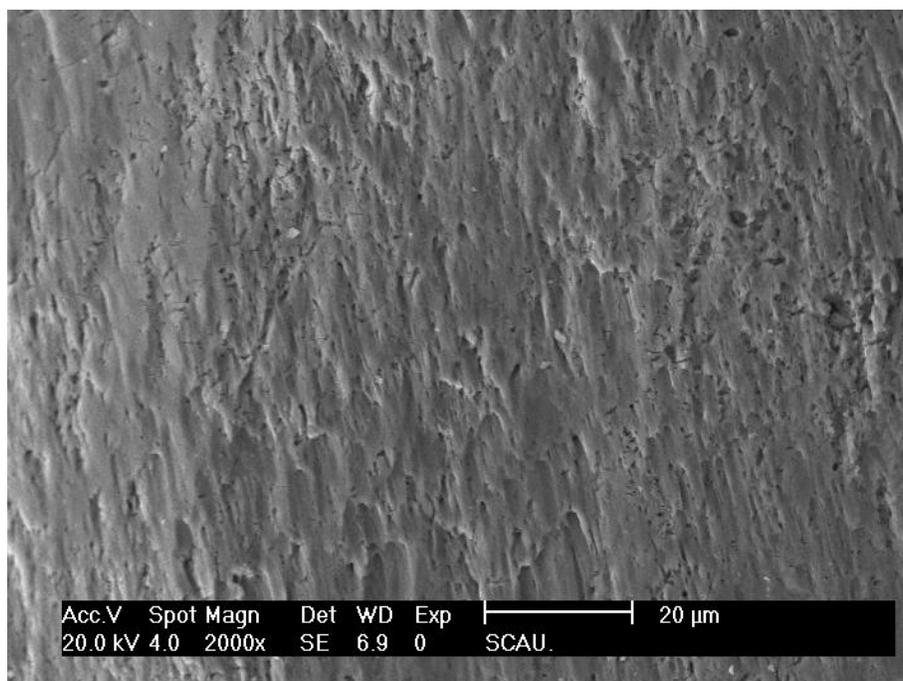
Table S1 Total Fe concentration (mg L^{-1}) in the selected solution samples collected at different time during the incubation experiment

Sampling time	C	T1	T2	T3
Day 7	0.29 ± 0.03	0.11 ± 0.02	0.27 ± 0.09	0.31 ± 0.02
Day 15	0.24 ± 0.05	0.28 ± 0.08	0.26 ± 0.02	0.26 ± 0.04
Day 25	0.29 ± 0.06	0.20 ± 0.01	0.24 ± 0.04	0.34 ± 0.03
Day 38	0.35 ± 0.06	0.43 ± 0.10	0.84 ± 0.10	0.34 ± 0.04
Day 43	0.30 ± 0.03	0.47 ± 0.12	0.52 ± 0.13	0.35 ± 0.04
Day 49	0.20 ± 0.06	0.17 ± 0.03	0.18 ± 0.02	0.19 ± 0.02

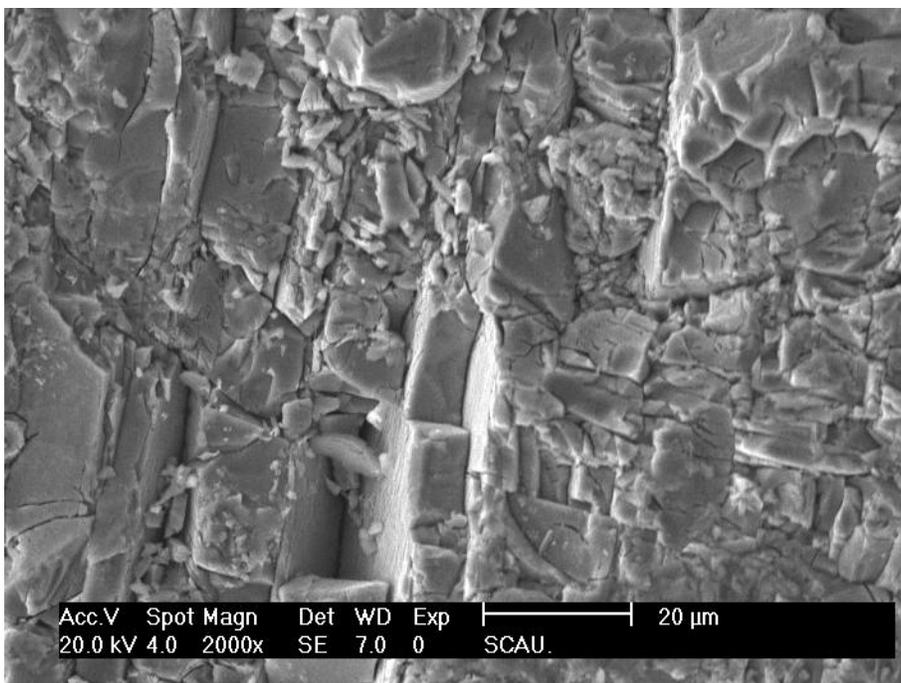
24 **2. Supplementary Figures**
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26



31 **Figure S1 SEM image showing the bacterial corrosion pits in the control. The corrosion**
32 **pits tended to be oriented along straight lines, which run parallel to each other**



33 **Figure S2 SEM image showing the corroded surface of pyrite cube in Treatment 2 (T2).**

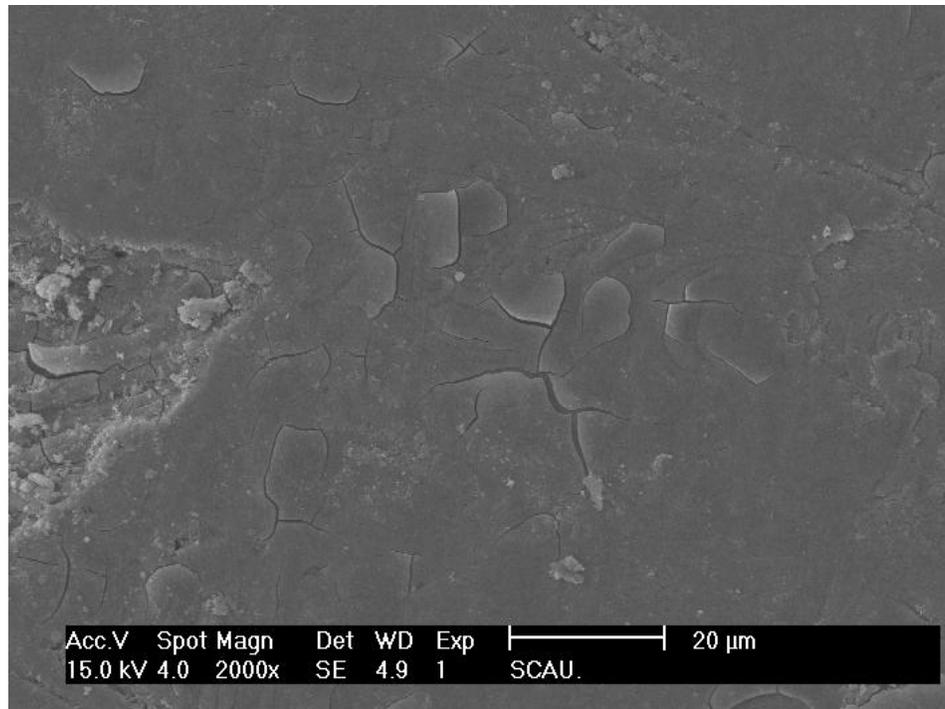


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34 **Figure S3 SEM image showing the corroded surface of pyrite cube in Treatment 3 (T3)**

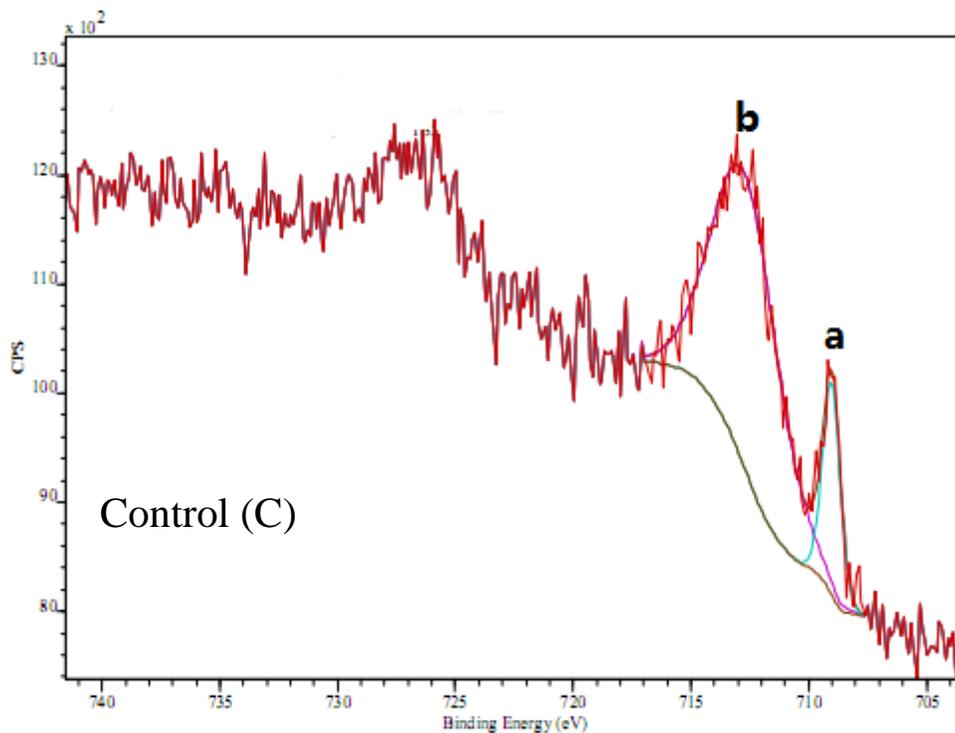
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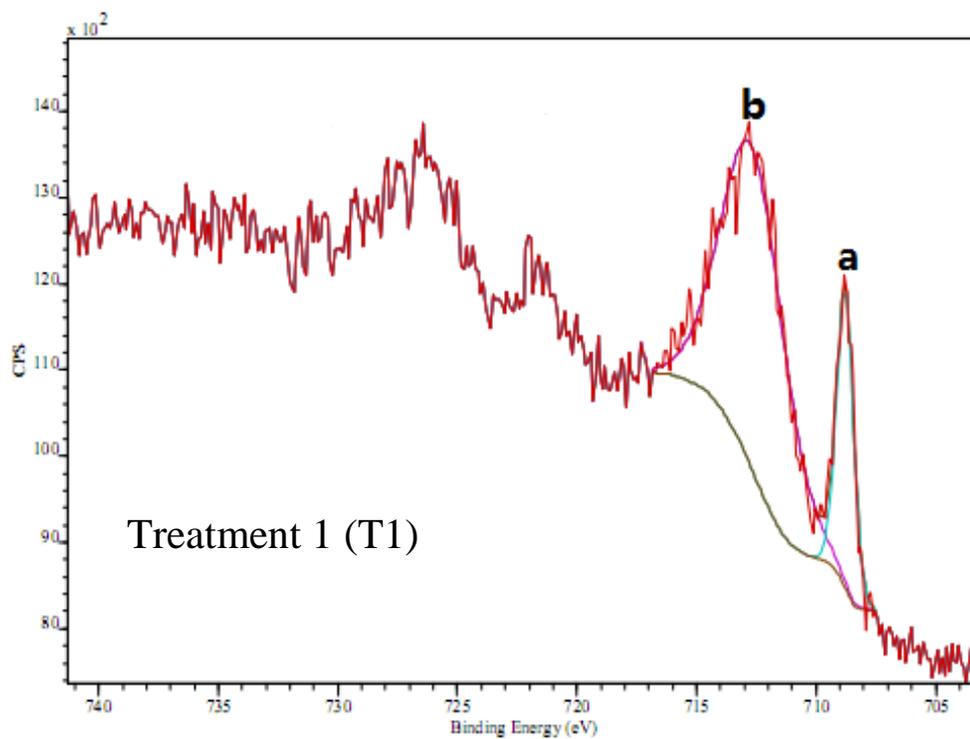
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38 **Figure S4 SEM image showing the reacted surface of pyrite cube in Treatment 3 (T3)**



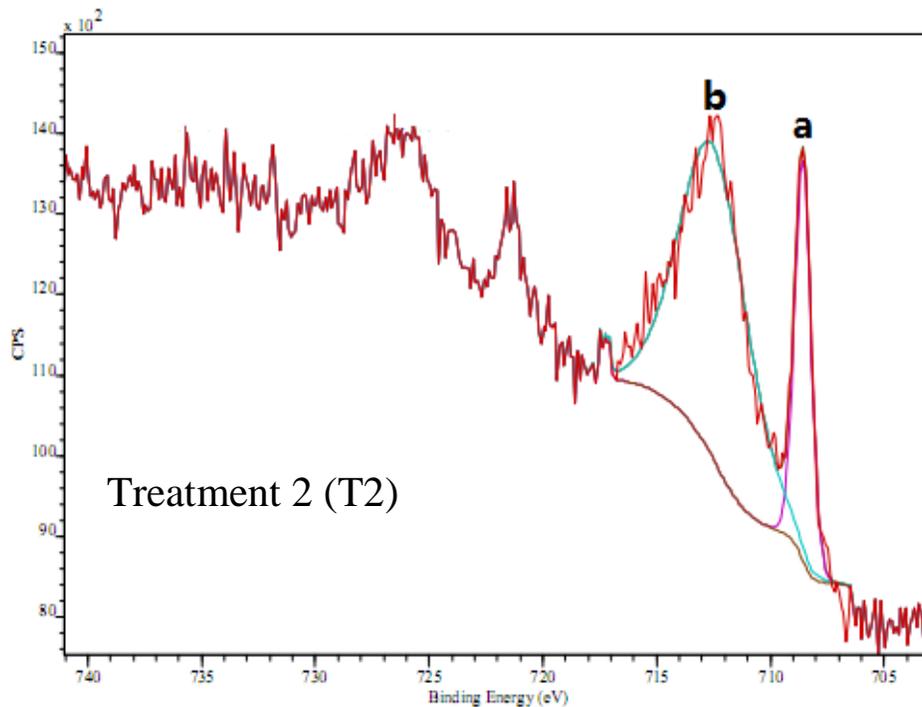
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40 **Figure S5 Fitted XPS Fe 2p spectrum of the reacted surface of pyrite cube in the control**



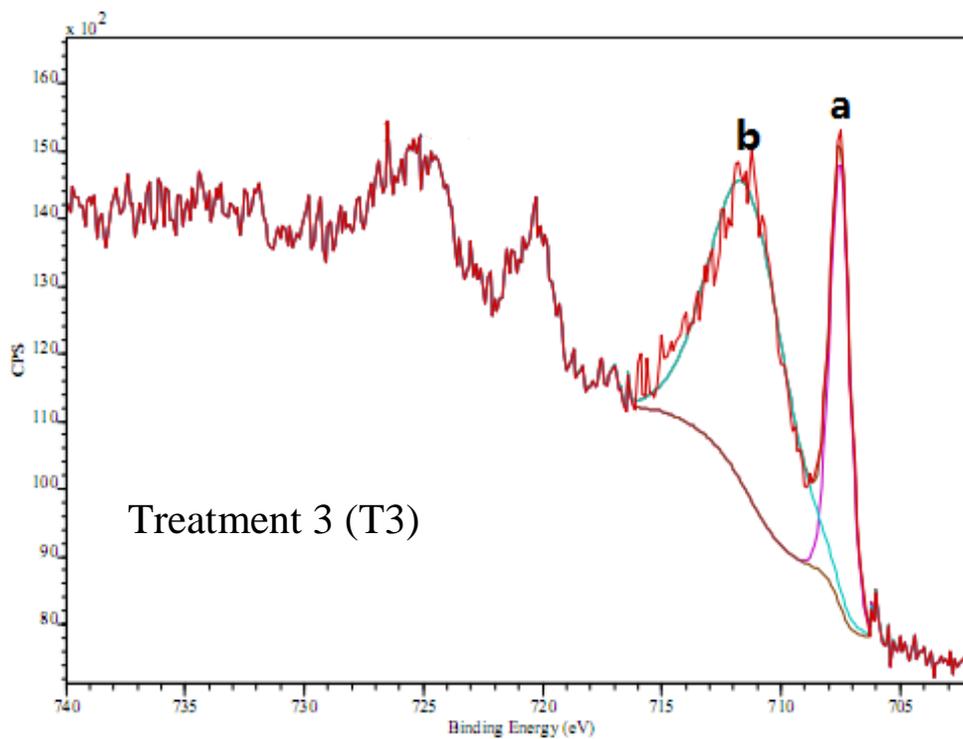
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42 **Figure S6 Fitted XPS Fe 2p spectrum of the reacted surface of pyrite cube in Treatment 1**
43 **(T1)**



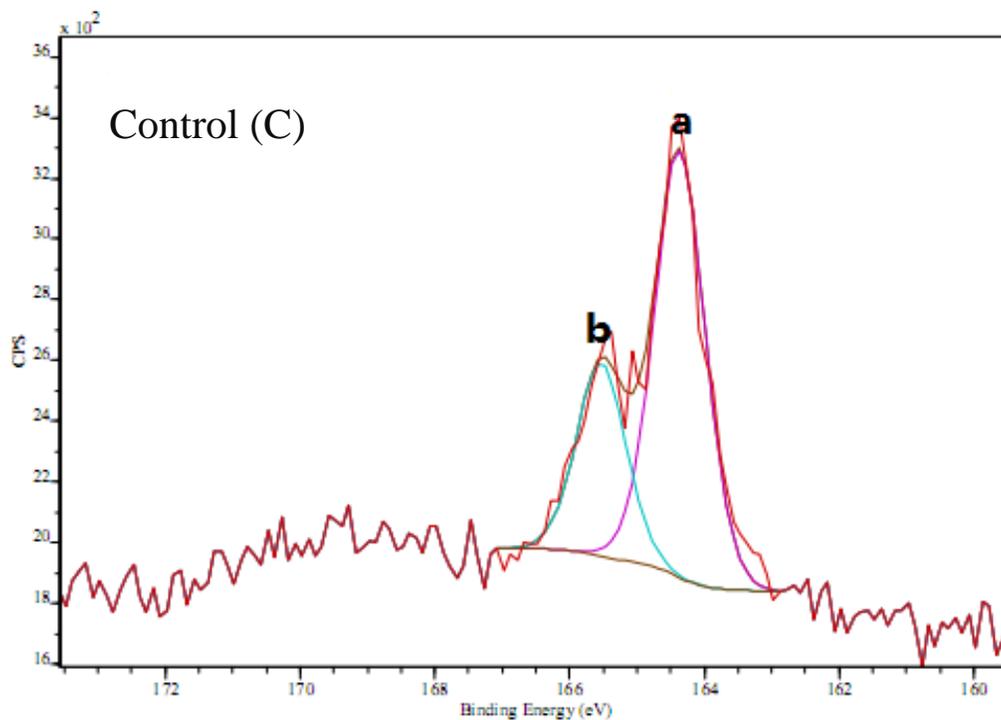
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45 **Figure S7 Fitted XPS Fe 2p spectrum of the reacted surface of pyrite cube in Treatment 2**
 46 **(T2)**

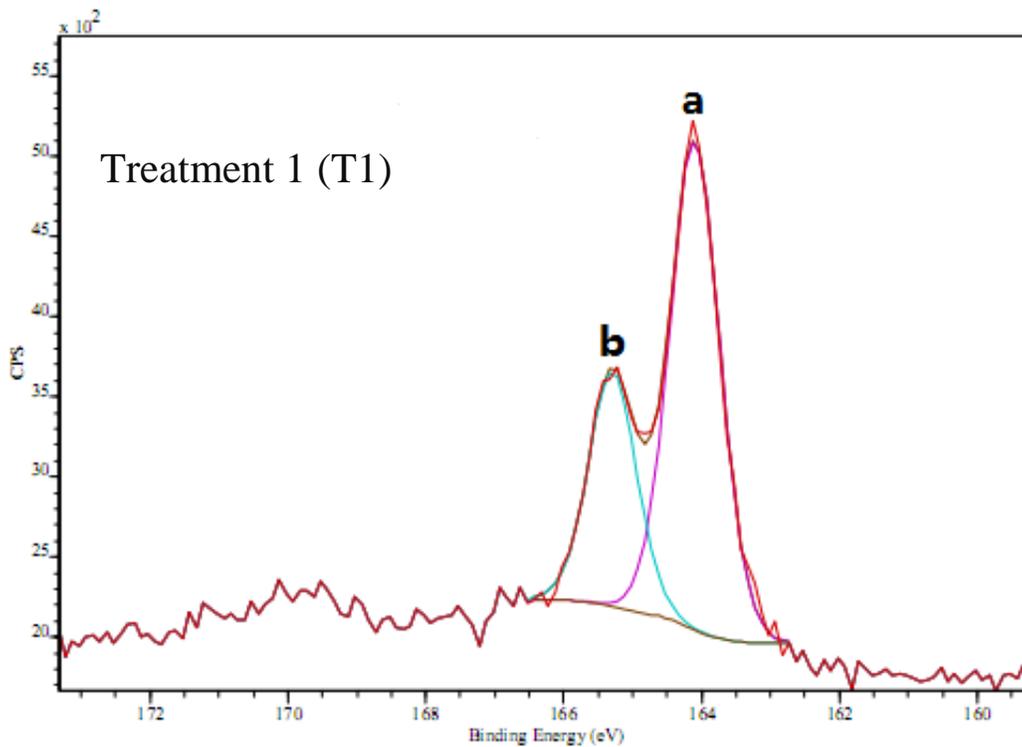


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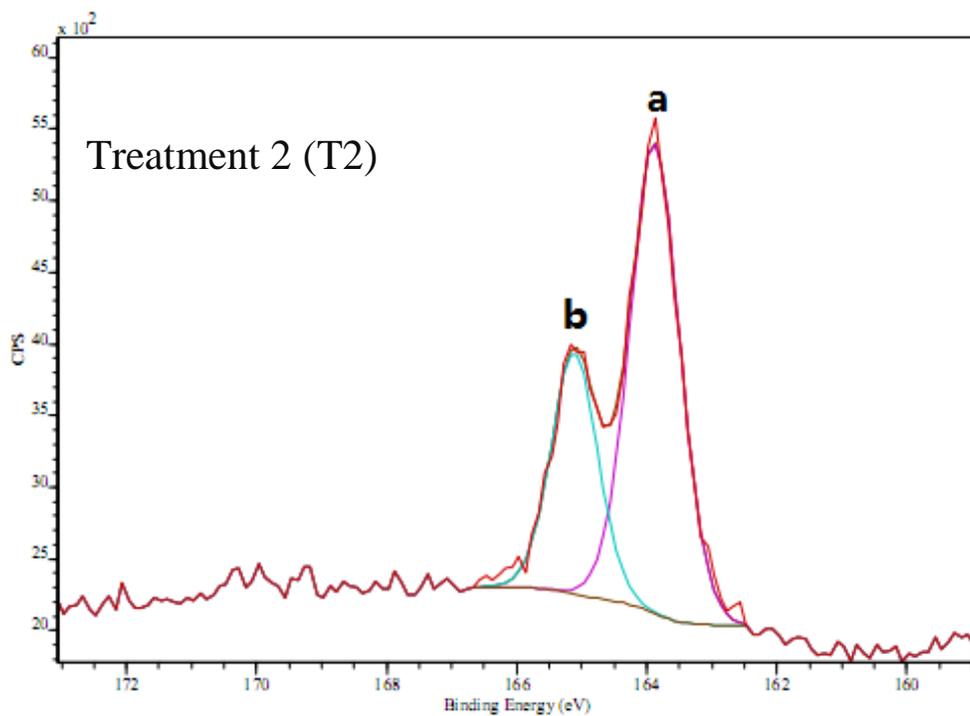
48 **Figure S8 Fitted XPS Fe 2p spectrum of the reacted surface of pyrite cube in Treatment 3**
 49 **(T3)**



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51 **Figure S9 Fitted XPS S 2p spectrum of the reacted surface of pyrite cube in the control**

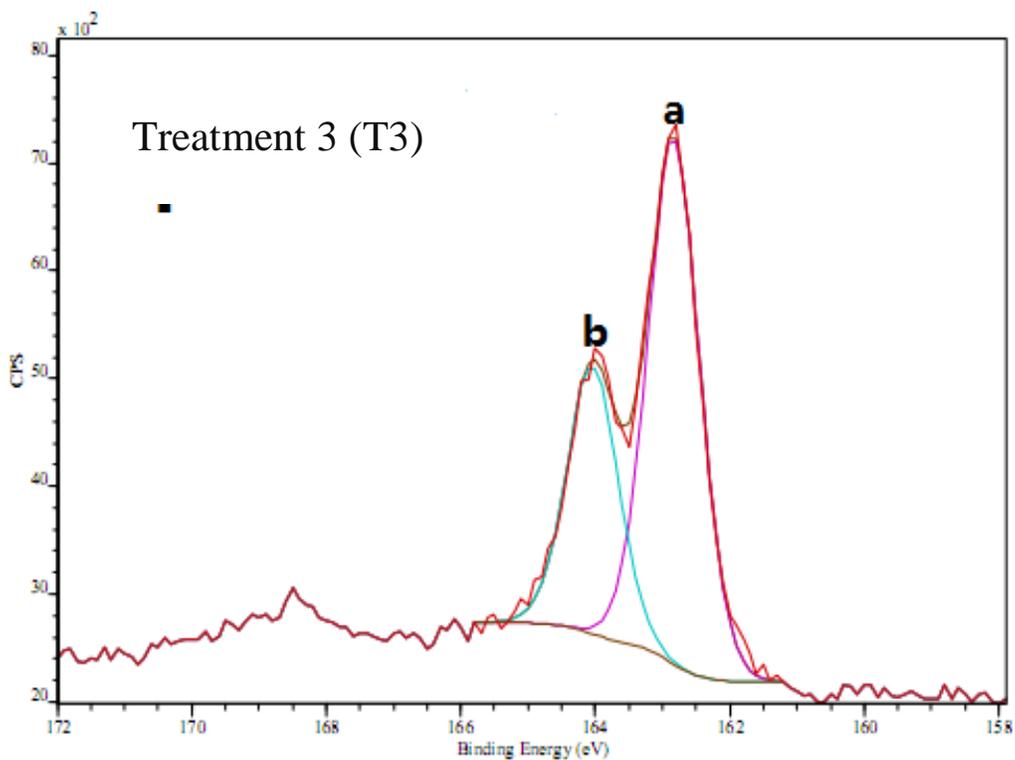


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53 **Figure S10 Fitted XPS S 2p spectrum of the reacted surface of pyrite cube in Treatment 1**
54 **(T1)**



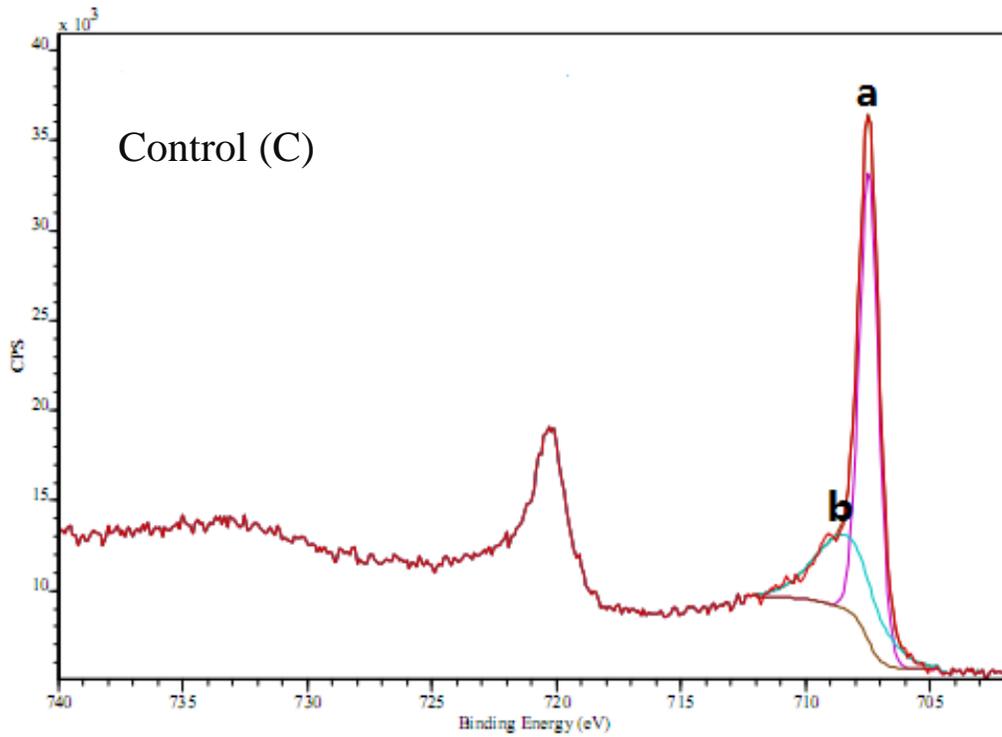
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56 **Figure S11 Fitted XPS S 2p spectrum of the reacted surface of pyrite cube in Treatment 2**
 57 **(T2)**



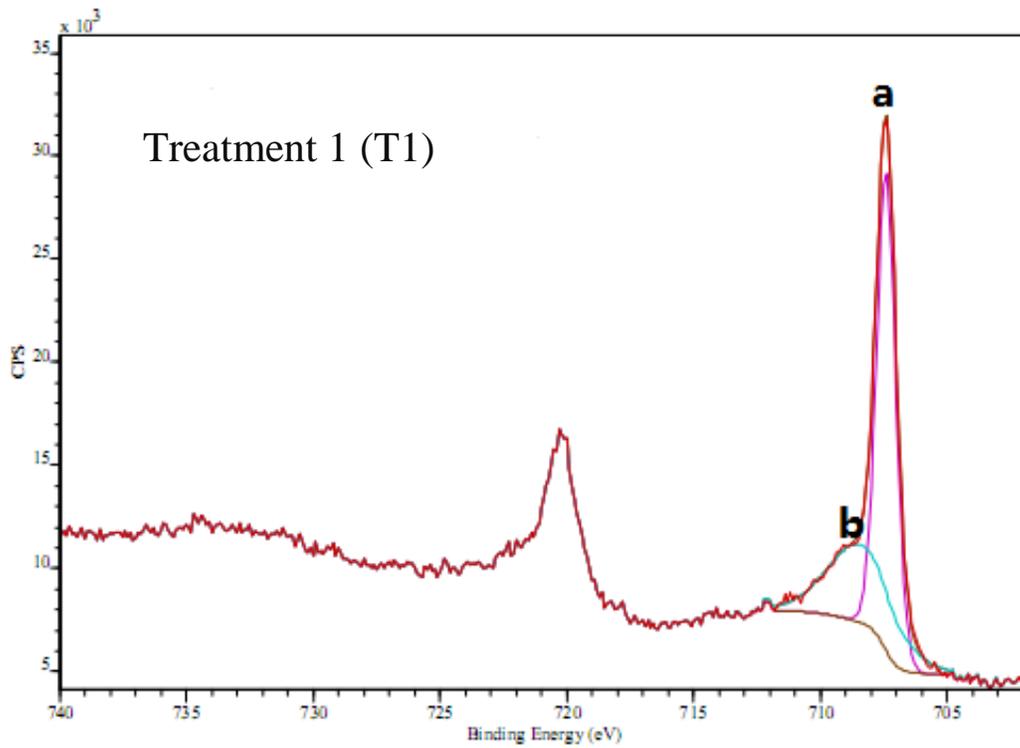
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59 **Figure S12 Fitted XPS S 2p spectrum of the reacted surface of pyrite cube in Treatment 3**
 60 **(T3)**



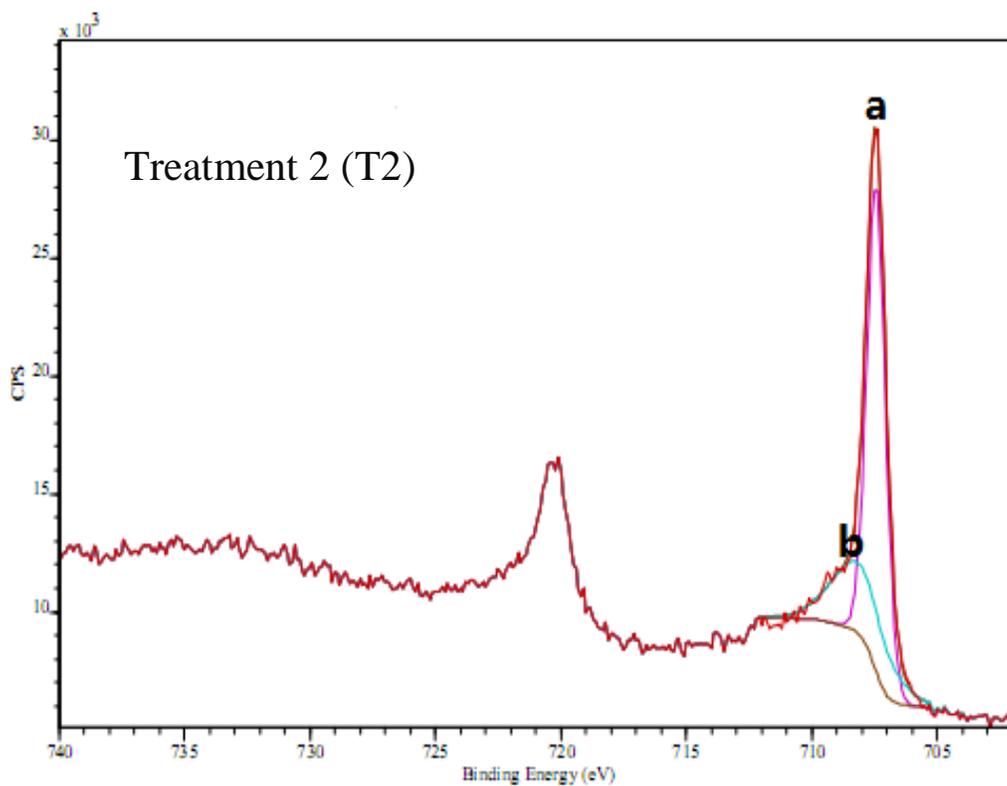
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62 **Figure S13 Fitted XPS Fe 2p spectrum of the corroded surface of pyrite cube in the control**



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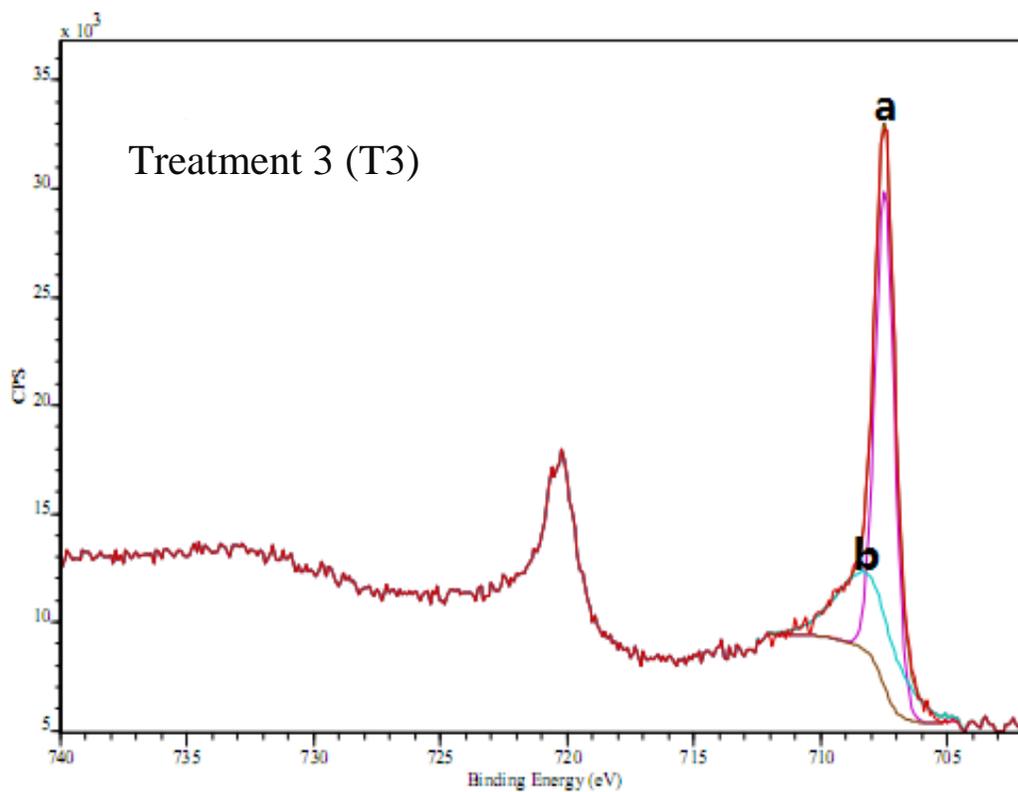
64 **Figure S14 Fitted XPS Fe 2p spectrum of the corroded surface of pyrite cube in T1**



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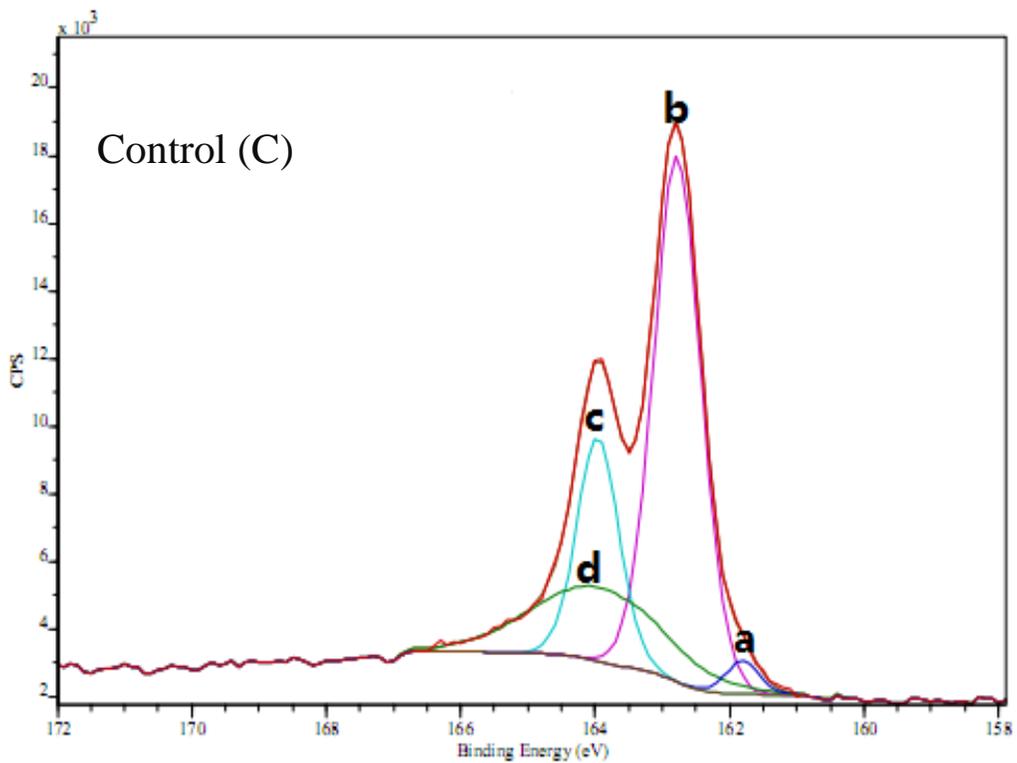
Figure S15 Fitted XPS Fe 2p spectrum of the corroded surface of pyrite cube in T2



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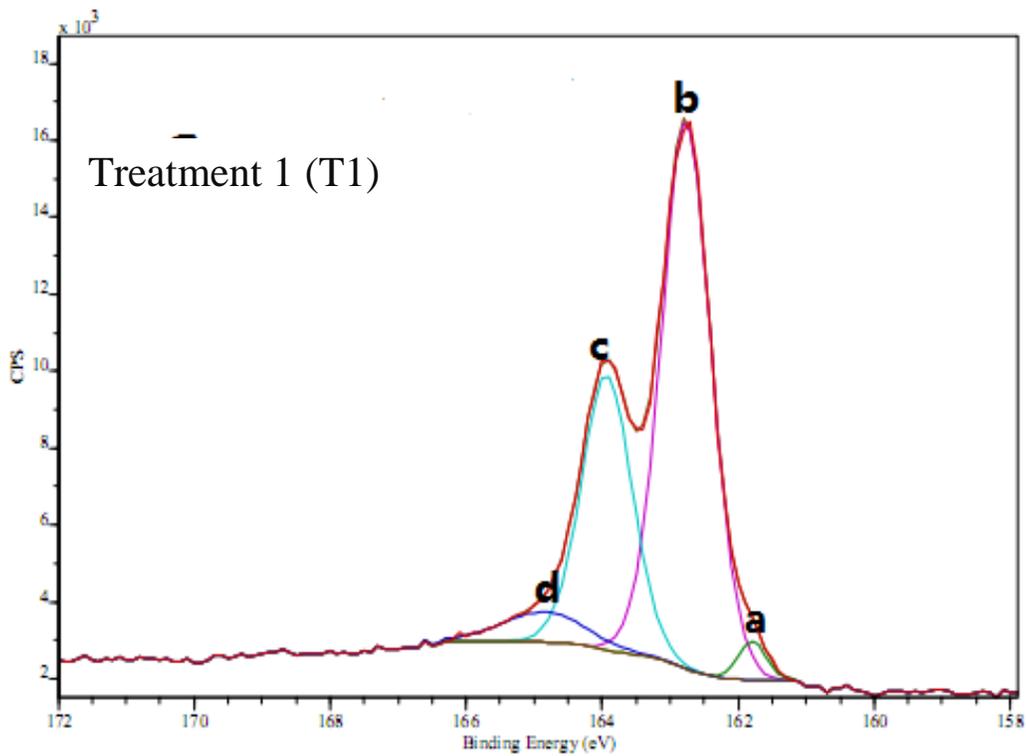
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Figure S16 Fitted XPS Fe 2p spectrum of the corroded surface of pyrite cube in T3



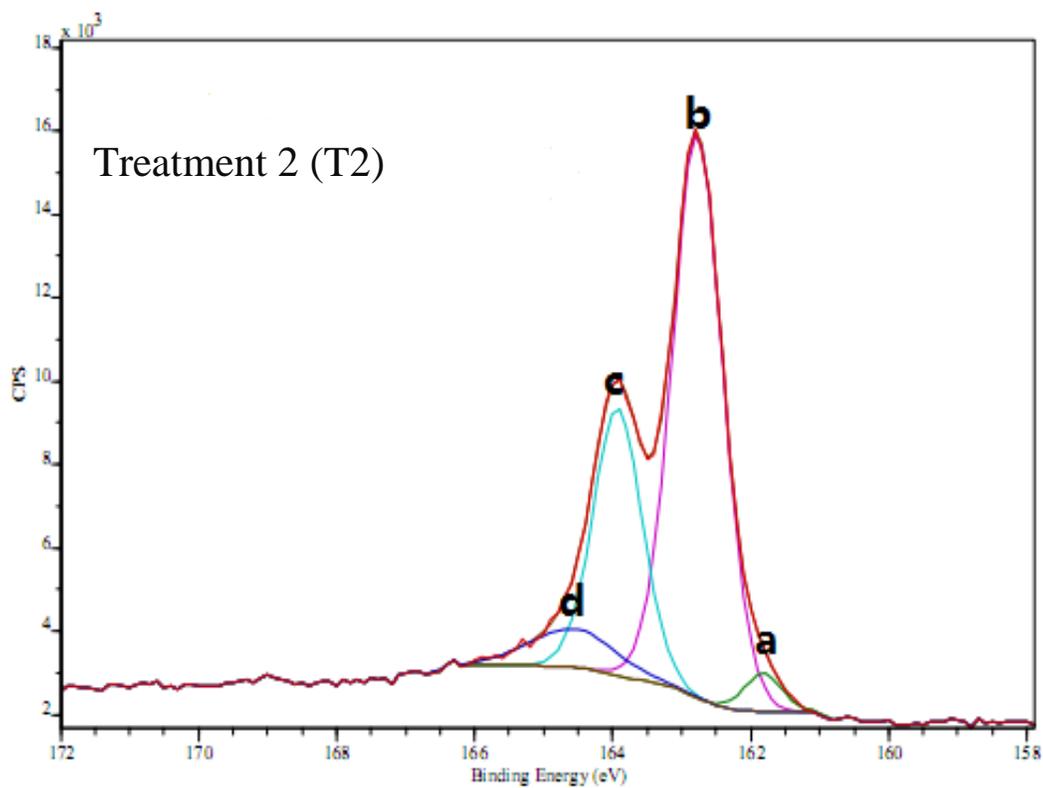
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70 **Figure 17 Fitted XPS S 2p spectrum of the corroded surface of pyrite cube in the control**



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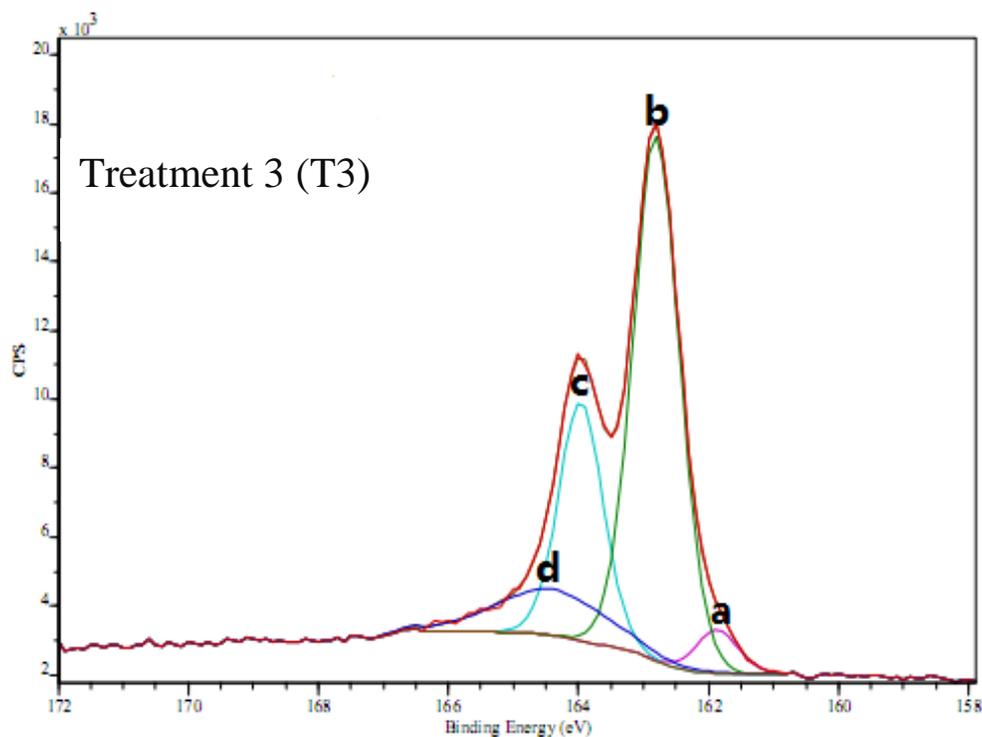
72 **Figure S18 Fitted XPS S 2p spectrum of the corroded surface of pyrite cube in T1**



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Figure S19 Fitted XPS S 2p spectrum of the corroded surface of pyrite cube in T2



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Figure S20 Fitted XPS S 2p spectrum of the corroded surface of pyrite cube in T3