

Supplementary Materials

Successive Grinding and Polishing Effect on the Retained Austenite in the Surface of 42CrMo4 Steel

Jiří Pechoušek ^{1,*}, Ernö Kuzmann ^{2,*}, René Vondrášek ¹, Anna Olina ³, Vlastimil Vrba ¹, Lukáš Kouřil ¹, Tomáš Ingr ¹, Petr Král ⁴ and Miroslav Mashlan ¹

Citation: Pechoušek, J.; Kuzmann, E.; Vondrášek, R.; Olina, A.; Vrba, V.; Kouřil, L.; Ingr, T.; Král, P.; Mashlan, M. Successive Grinding and Polishing Effect on the Retained Austenite in the Surface of 42CrMo4 Steel. *Metals* **2022**, *12*, 119. <https://doi.org/10.3390/met12010119>

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

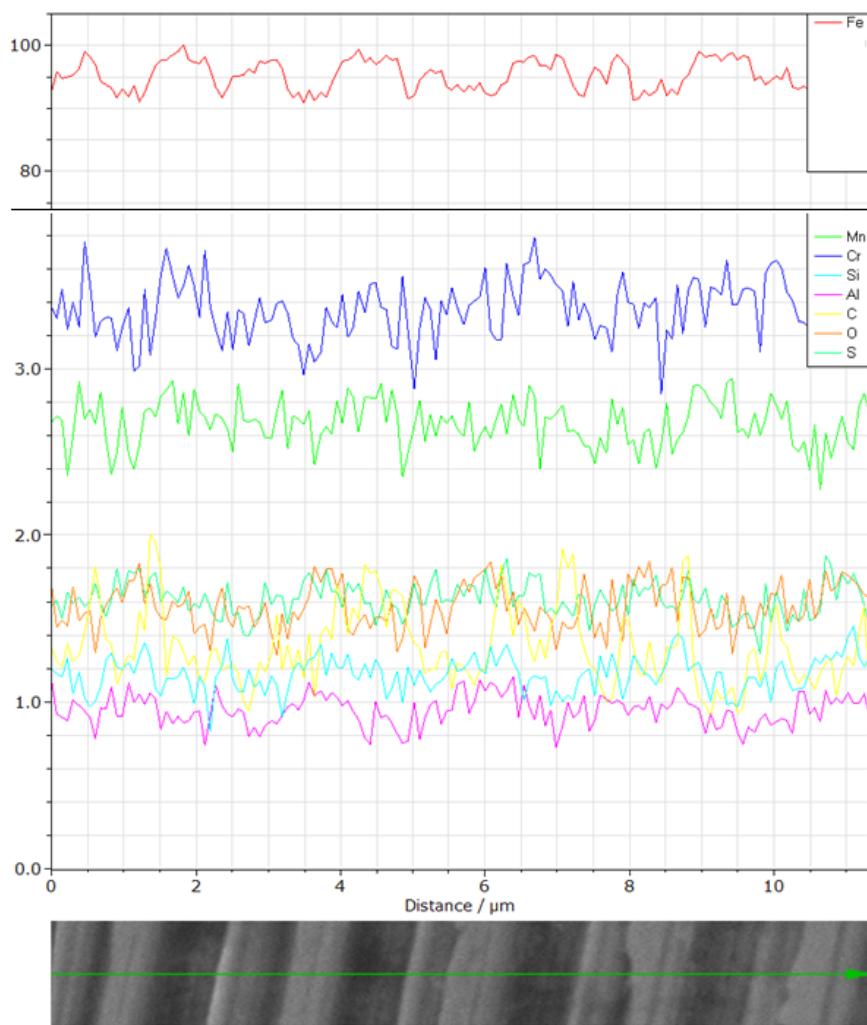


Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Table S1. EDS analysis (wt. %) of alloyed elements in primary samples.

Sample	Fe	C	Si	S	Cr	Mn	Mo	Ca	V
S1	82.45	1.95	0.13	0.05	0.96	0.52	0.06	-	-
S2	86.11	1.43	0.16	0.00	1.05	0.66	0.16	-	-
S3	86.32	1.35	0.14	0.01	1.02	0.57	0.11	0.03	-
S4	87.96	1.72	0.10	0.02	1.01	0.56	0.12	-	-
S5	87.88	1.73	0.12	0.05	0.92	0.53	0.10	-	0.03
S6	82.74	1.13	0.10	0.07	1.01	0.54	0.01	-	-

Symbol “-” states that the value is under the detection limit of the method.

**Figure S1.** EDS line mapping on the S1 surface.

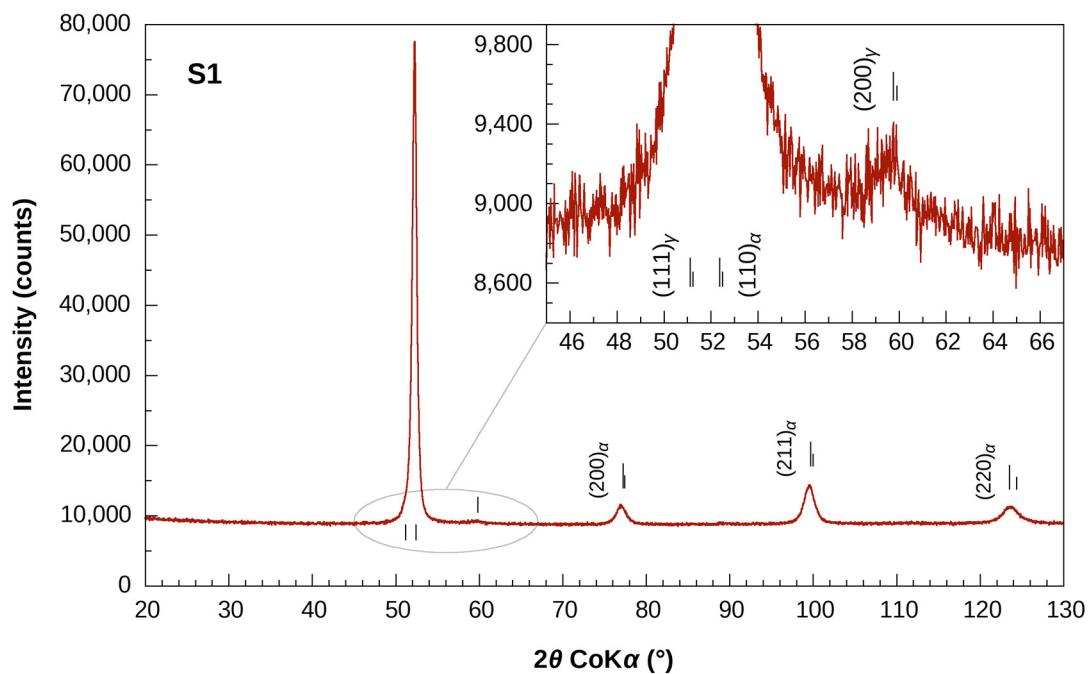


Figure S2. XRD pattern of sample S1.

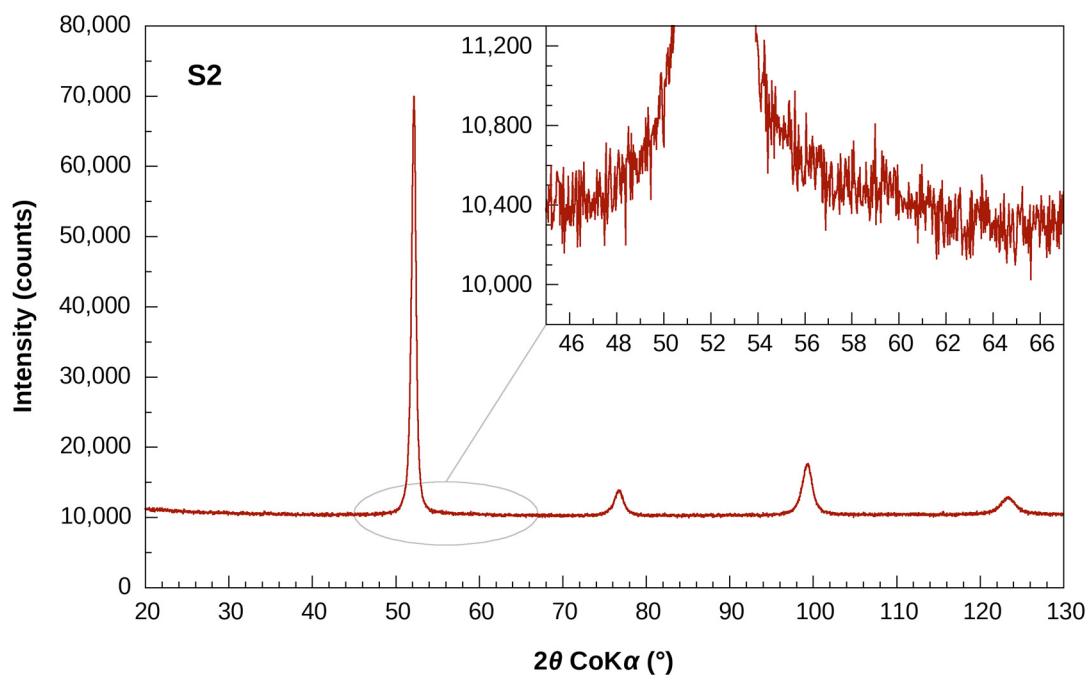


Figure S3. XRD pattern of sample S2.

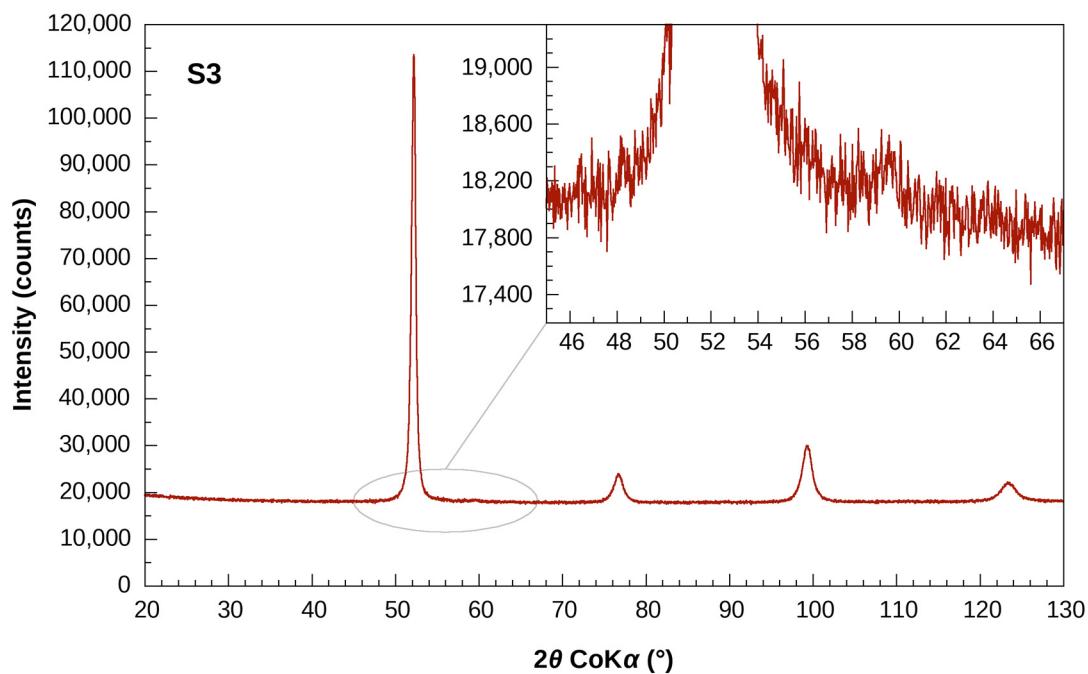


Figure S4. XRD pattern of sample S3.

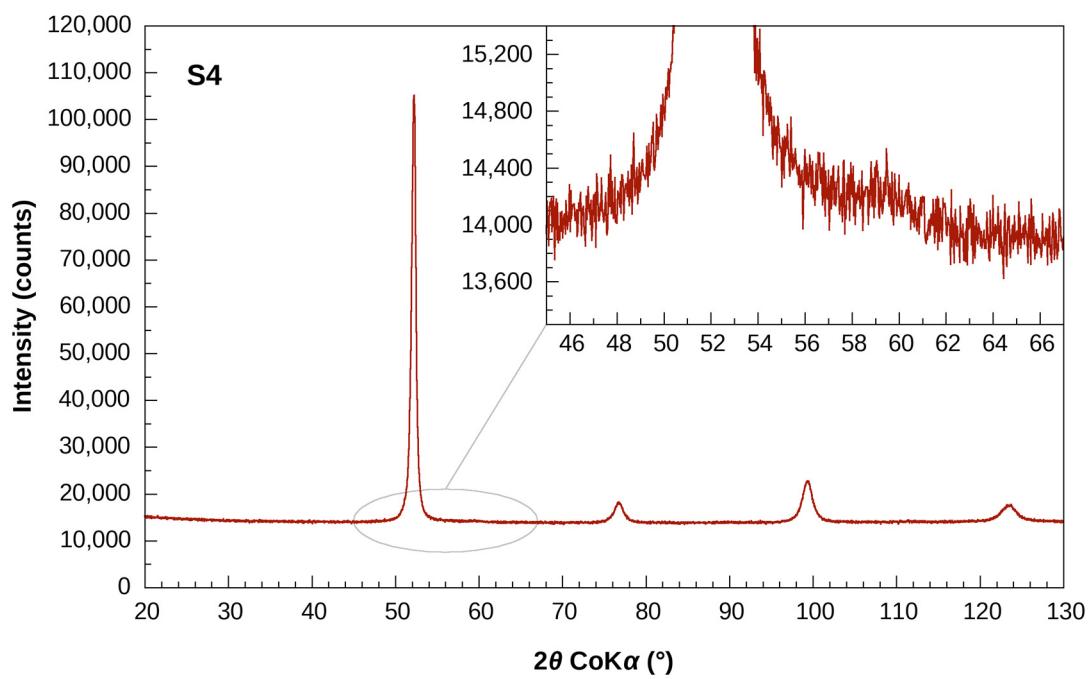


Figure S5. XRD pattern of sample S4.

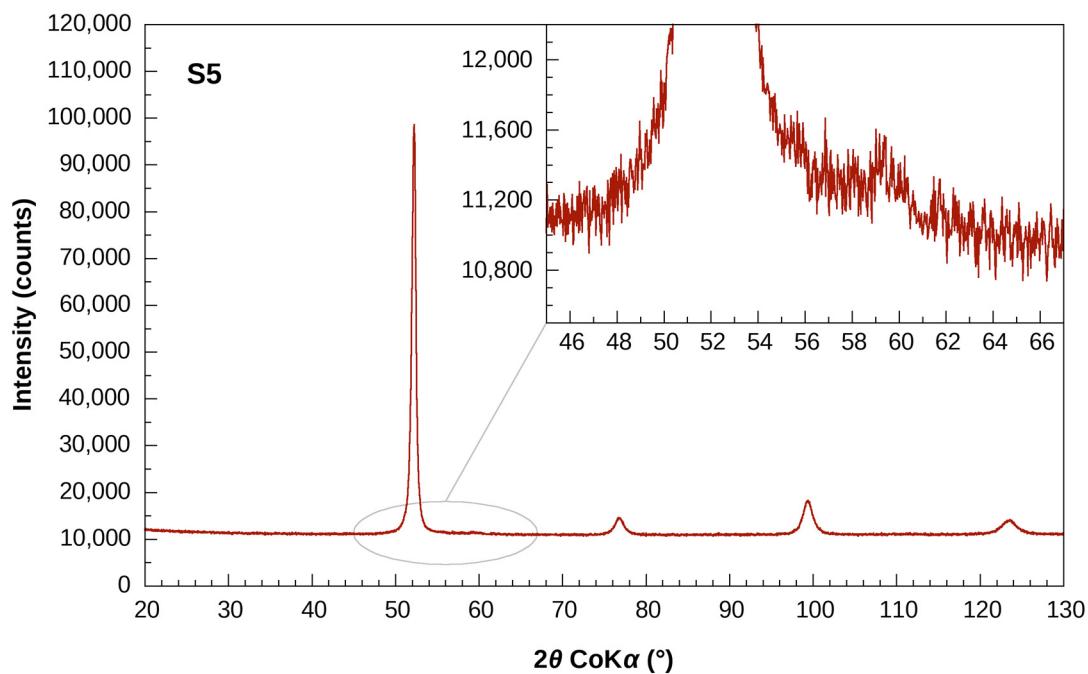


Figure S6. XRD pattern of sample S5.

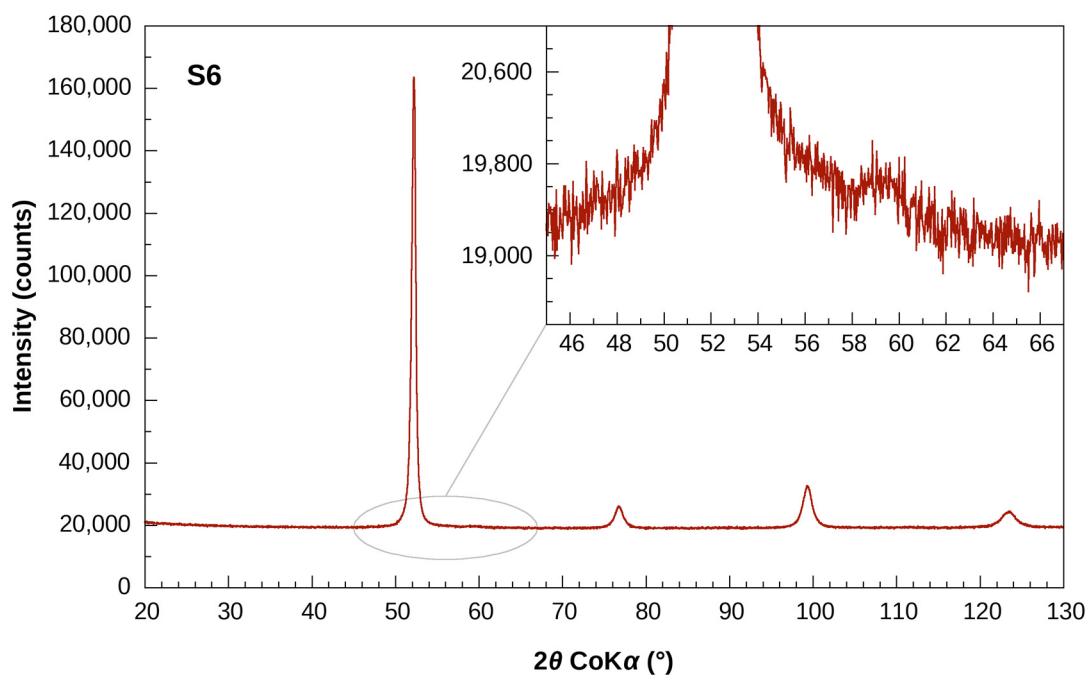


Figure S7. XRD pattern of sample S6.

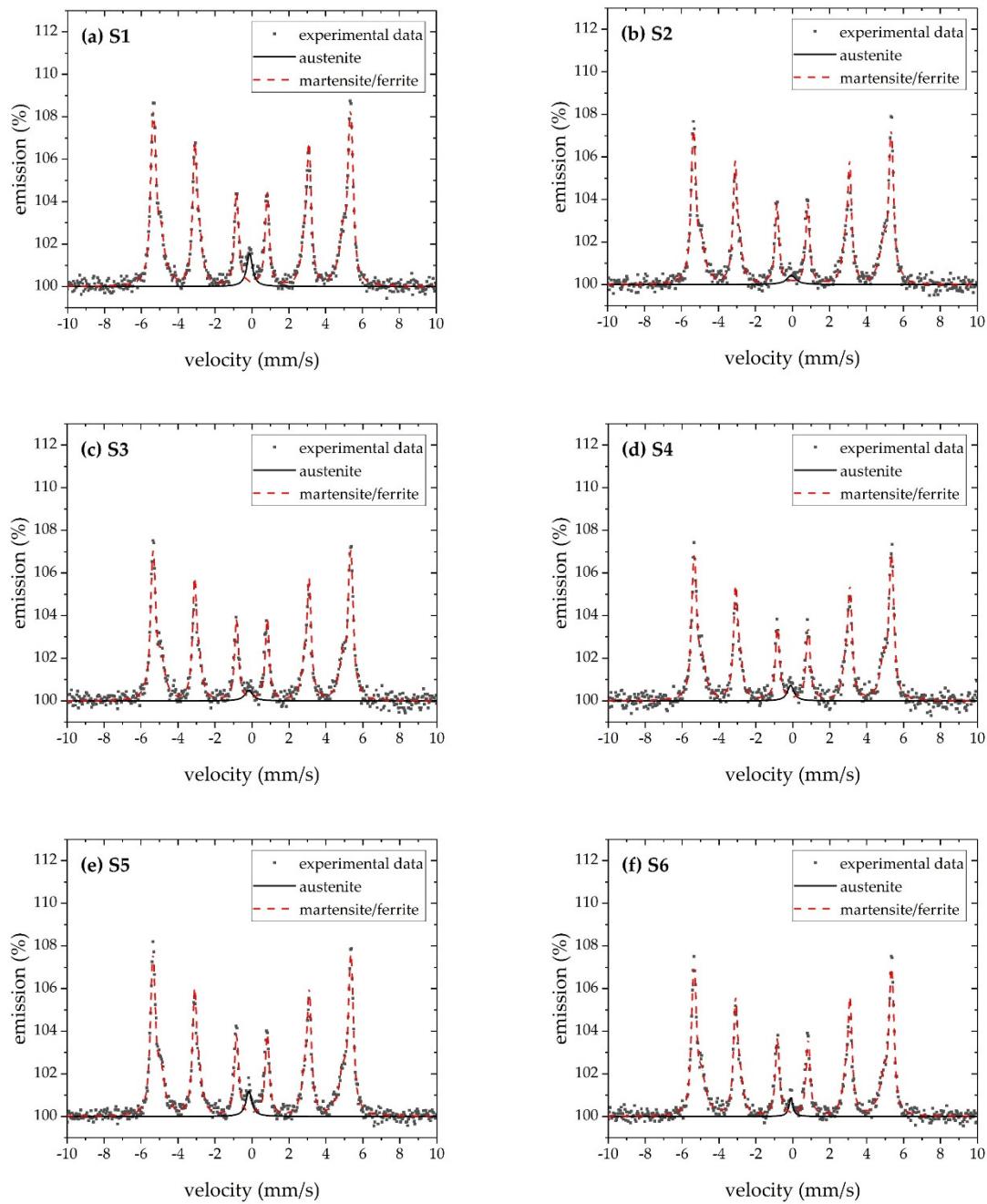


Figure S8. Mössbauer spectra of primary samples (a) S1, (b) S2, (c) S3, (d) S4, (e) S5 and (f) S6.

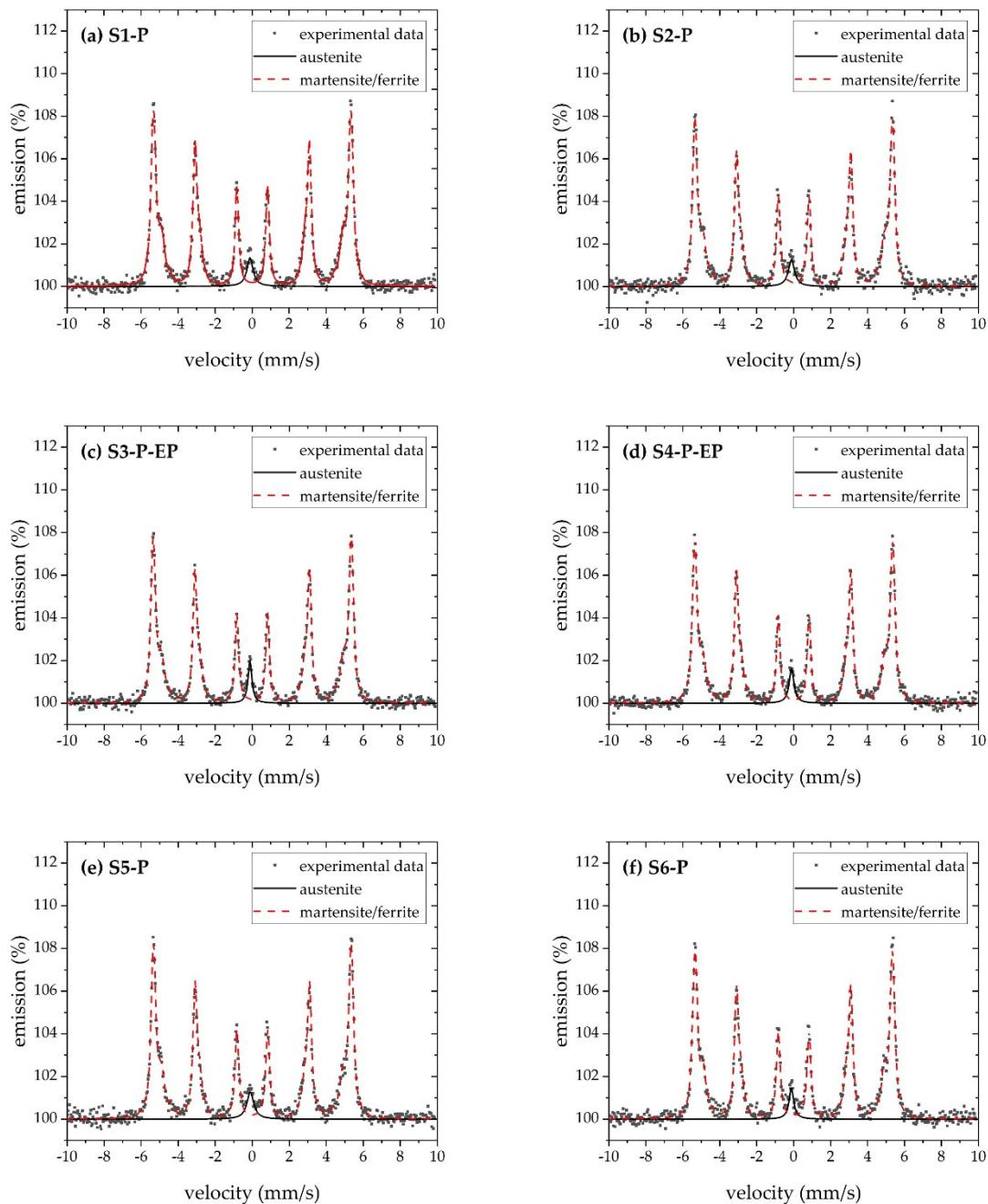


Figure S9. Mössbauer spectra of secondary samples (a) S1-P, (b) S2-P, (c) S3-P-EP, (d) S4-P-EP, (e) S5-P and (f) S6-P.

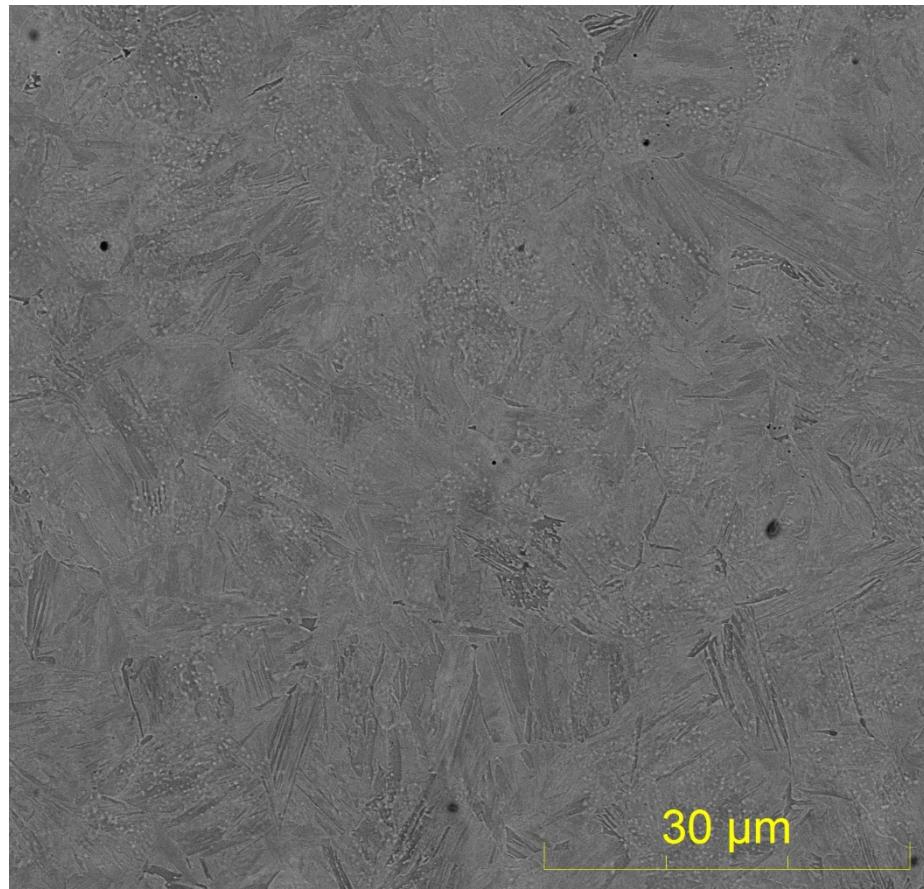
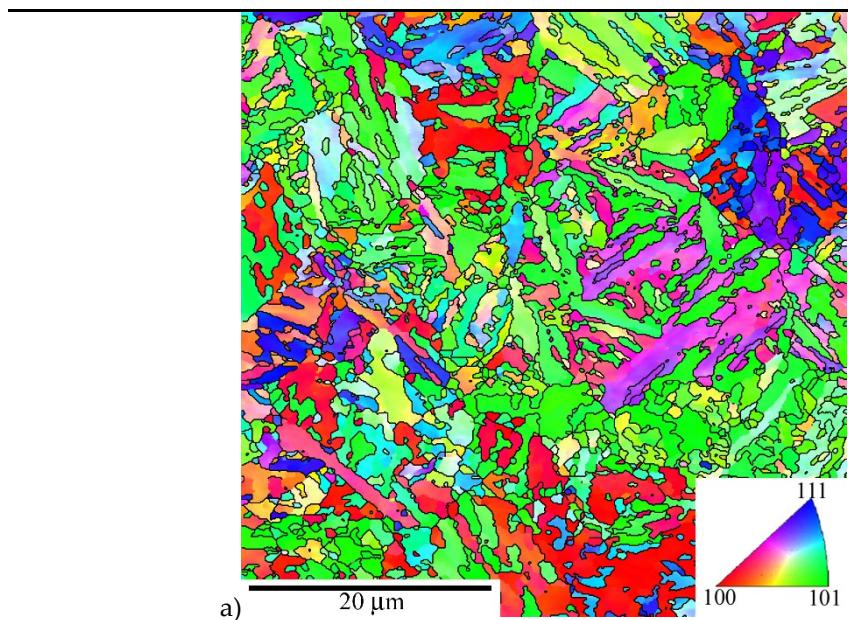


Figure S10. SEM/BSE (backscattered electrons) regime microscopy image of sample surface S3-P-EP.



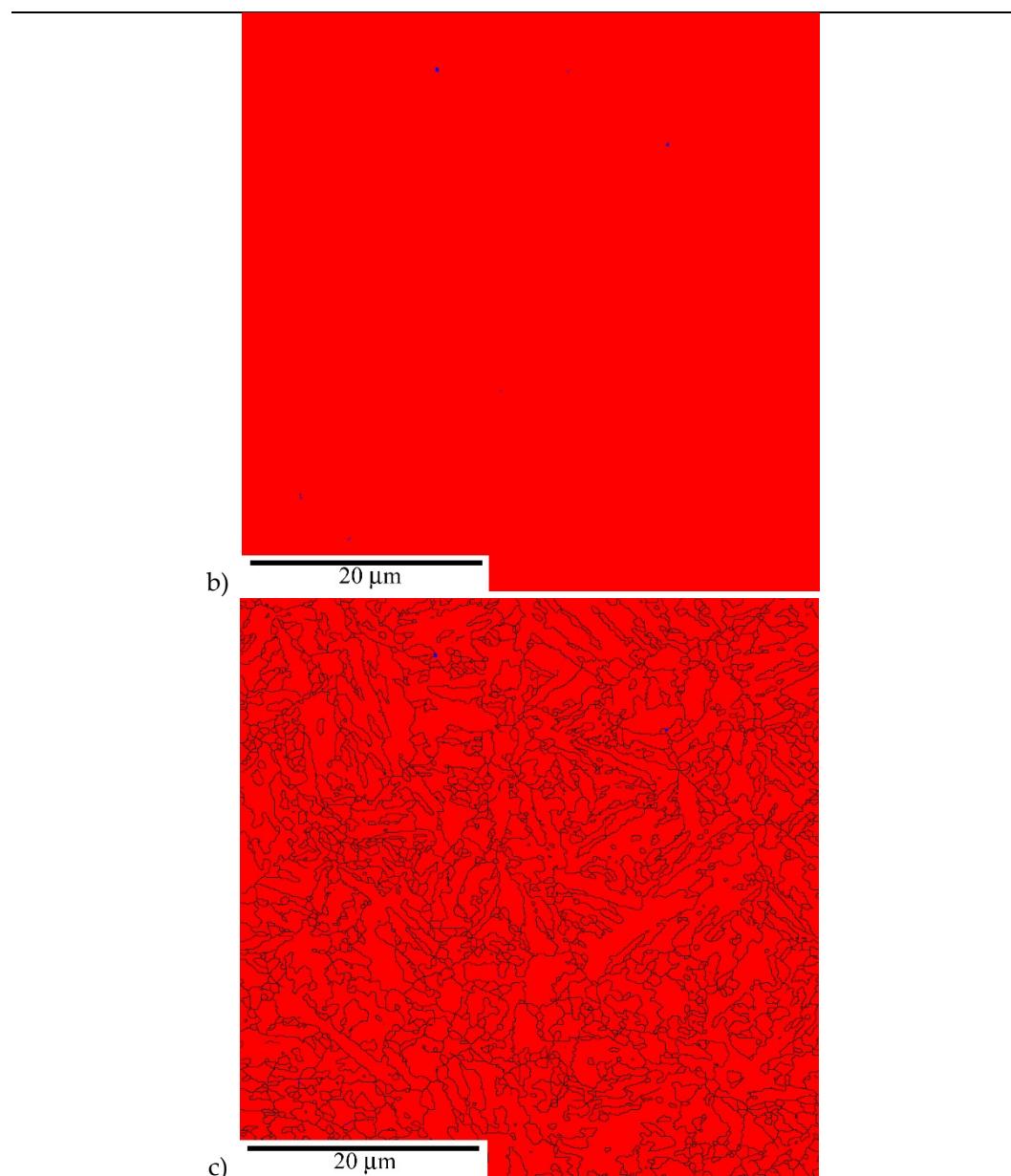


Figure S11. EBSD image of sample surface S3-P-EP - crystal orientation map for core area; (a) EBSD map, (b) phase map without boundaries (c) phase map with boundaries, where blue color represents austenite and red color ferrite.

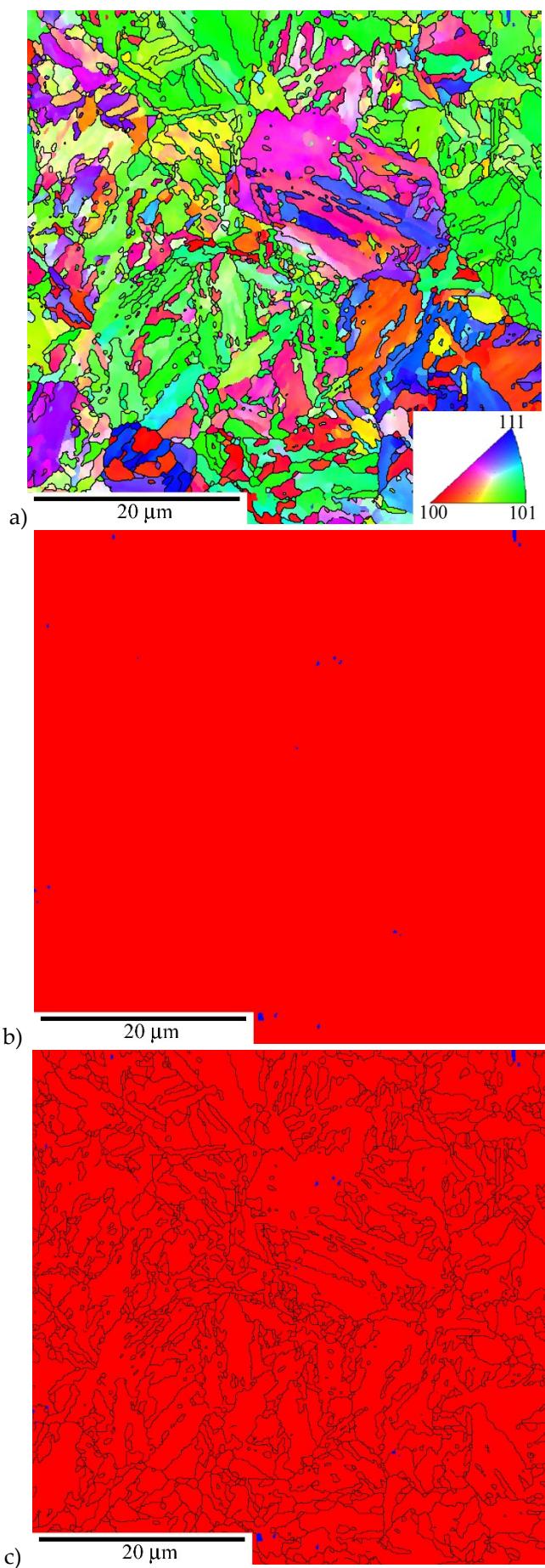


Figure S12. EBSD image of sample surface S4-P-EP - crystal orientation map for core area; (a) EBSD map, (b) phase map without boundaries (c) phase map with boundaries, where blue color represents austenite and red color ferrite.