metals – 2252121
Article

„Investigation of the Porosity Gradient in Thickness Direction Formed by Cold Rolling in Porous Aluminum”

Jörn Tychsen* and Joachim Rösler
Institute for Materials Science, TU Braunschweig, Langer Kamp 8, 38106 Braunschweig, Germany
*Correspondence: j.tychsen@tu-braunschweig.de Tel.: +49531 391 3067

Supplementary

Within the supplementary material, measured porosity values for rolling experiments which are not shown within the publication, are shown.

First Series	Sample designation
Figure S1:	5-0.05-1
Figure S2:	5-0.05-3
Figure S3:	5-0.05-10
Figure S4:	5-0.15-1
Figure S5:	5-0.15-3
Figure S6:	5-0.50-10
Figure S7:	20-0.05-3
Figure S8:	20-0.15-1
Figure S9:	20-0.15-3
Figure S10:	20-0.15-10

Second Series	Sample designation
Figure S11:	5-0.05-1
Figure S12:	5-0.05-3
Figure S13:	5-0.05-10
Figure S14:	5-0.15-1
Figure S15:	5-0.15-3
Figure S16:	5-0.50-10
Figure S17:	20-0.05-3
Figure S18:	20-0.15-1
Figure S19:	20-0.15-3
Figure S20:	20-0.15-10

First series

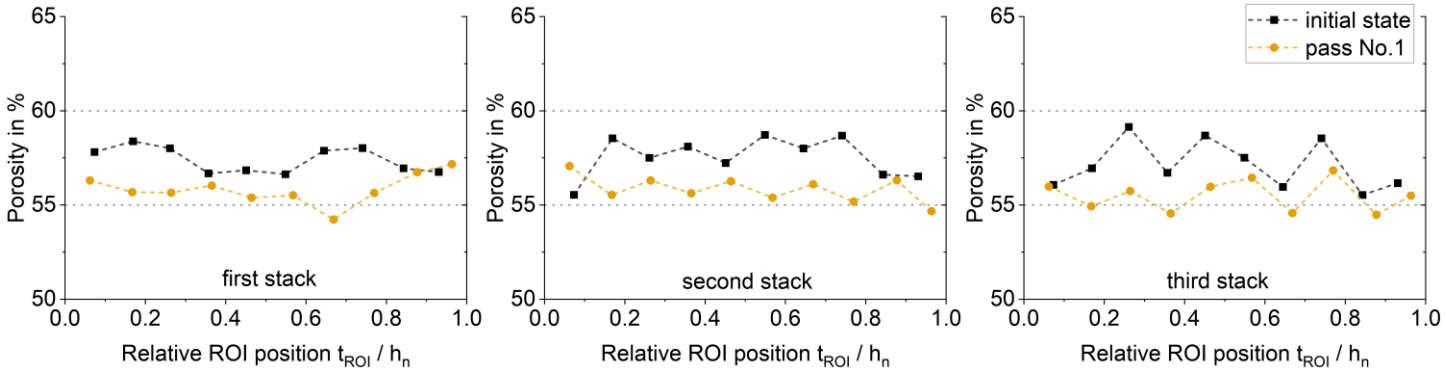

Figure S1. Series I: 5-0.05-1 ($l_d/h_m \approx 1.05$): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

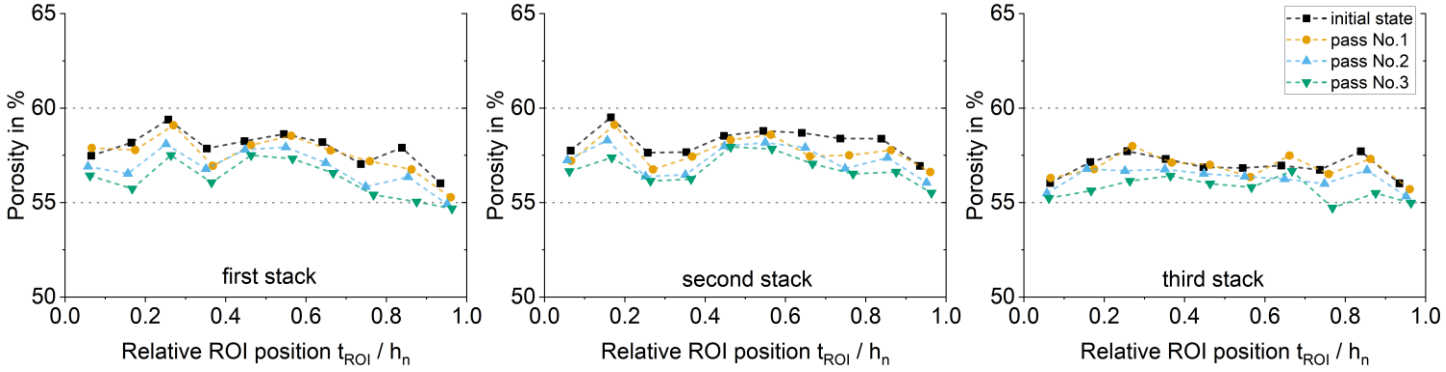

Figure S2. Series I: 5-0.05-3 ($l_d/h_m \approx 0.56$-0.62): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

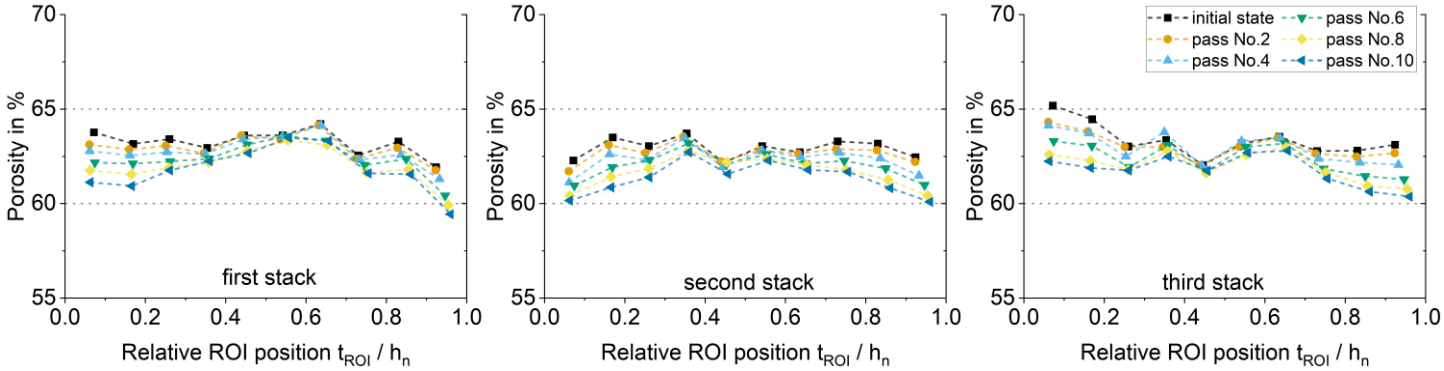

Figure S3. Series I: 5-0.05-10 (l_d/h_m ≈ 0.20-0.41): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

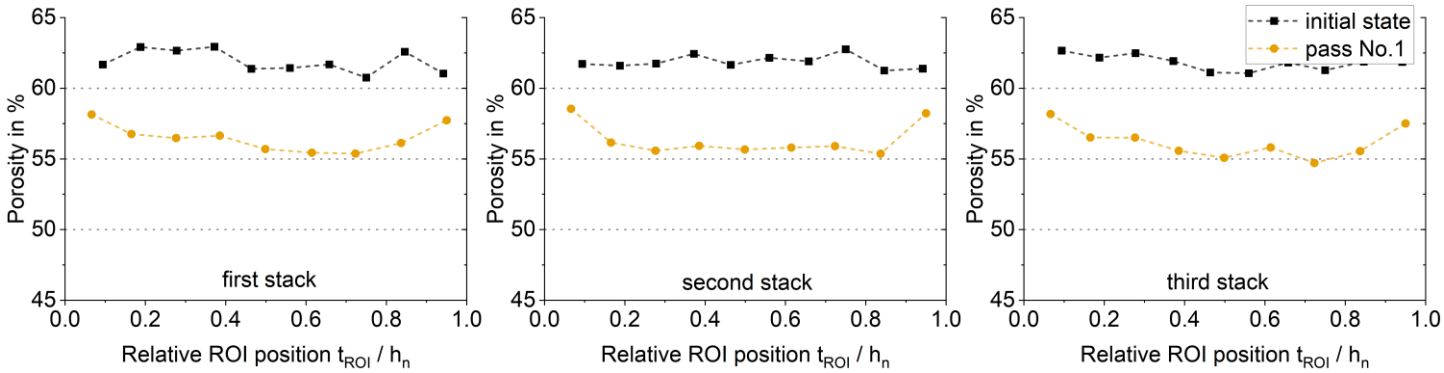

Figure S4. Series I: 5-0.15-1 (l_d/h_m ≈ 1.90): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

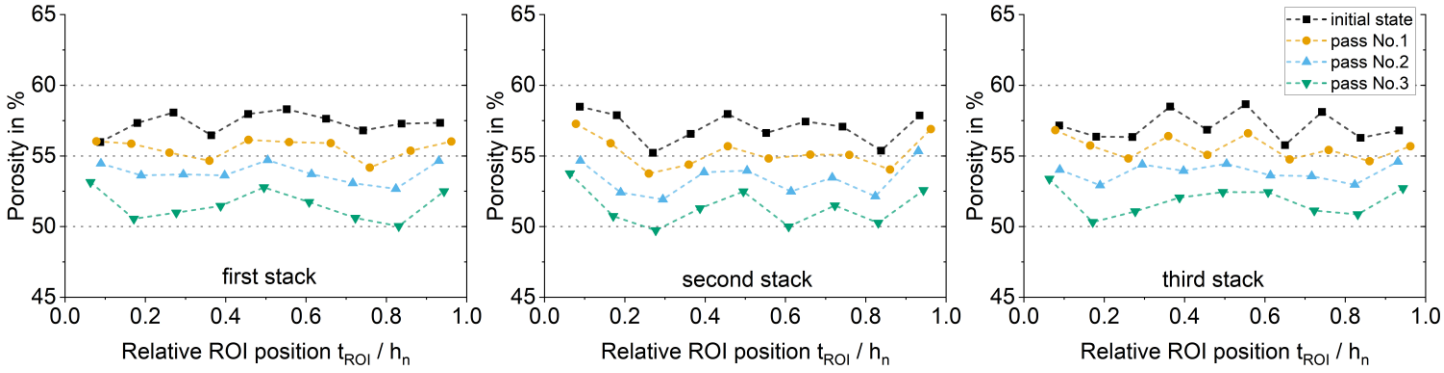

Figure S5. Series I: 5-0.15-3 (l_d/h_m ≈ 1.07-1.09): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

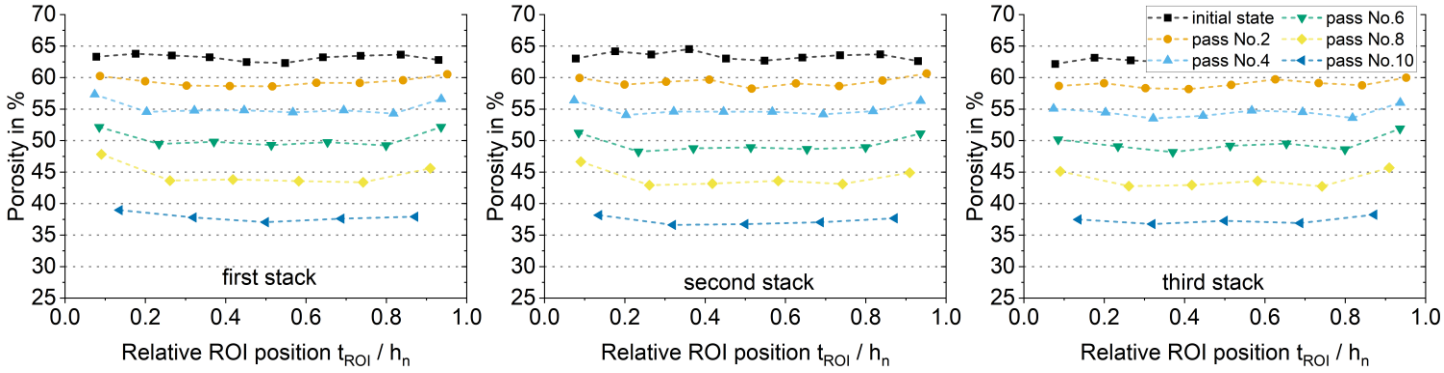

Figure S6. Series I: 5-0.50-10 (l_d/h_m ≈ 1.19-1.64): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

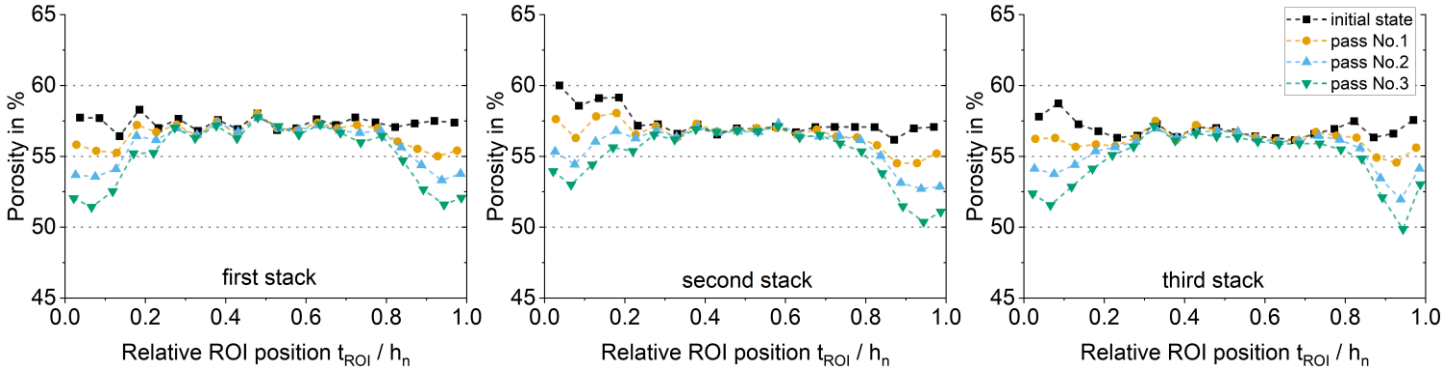

Figure S7. Series I: 20-0.05-3 (l_d/h_m ≈ 0.28-0.30): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

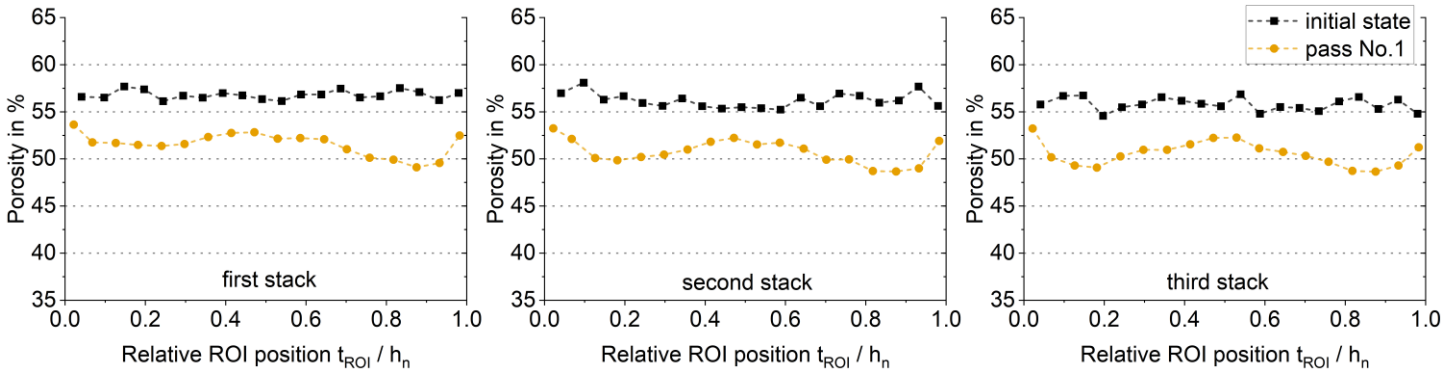

Figure S8. Series I: 20-0.15-1 (l_d/h_m ≈ 0.92): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

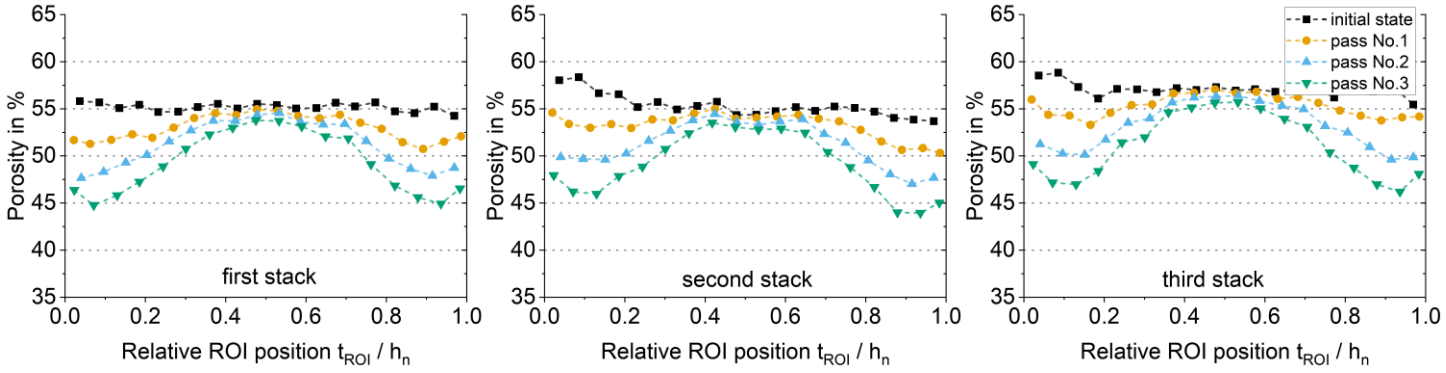

Figure S9. Series I: 20-0.15-3 (l_d/h_m ≈ 0.53-0.55): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

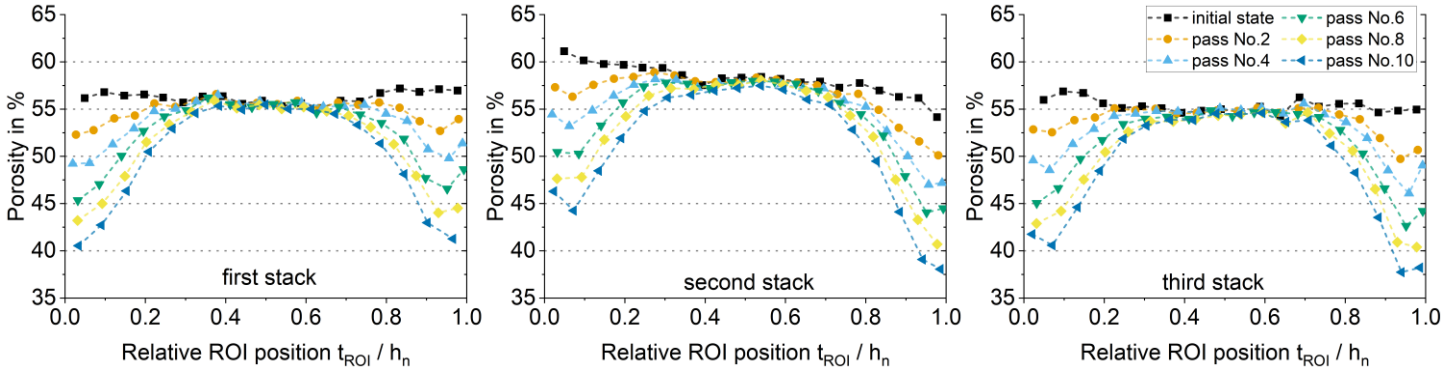

Figure S10. Series I: 20-0.15-10 (l_d/h_m ≈ 0.28-0.31): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

Second series

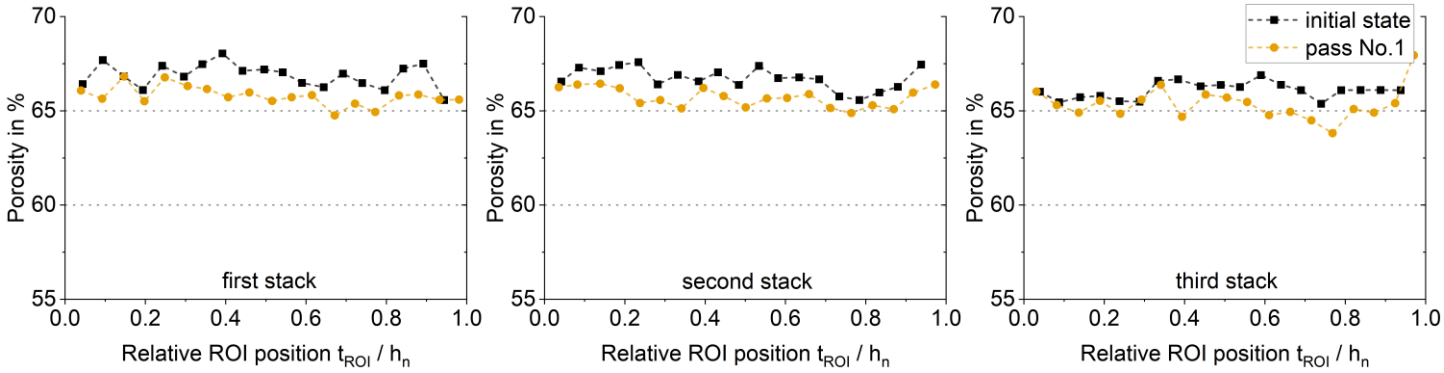

Figure S11. Series II: 5-0.05-1 ($l_d/h_m \approx 1.03$): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

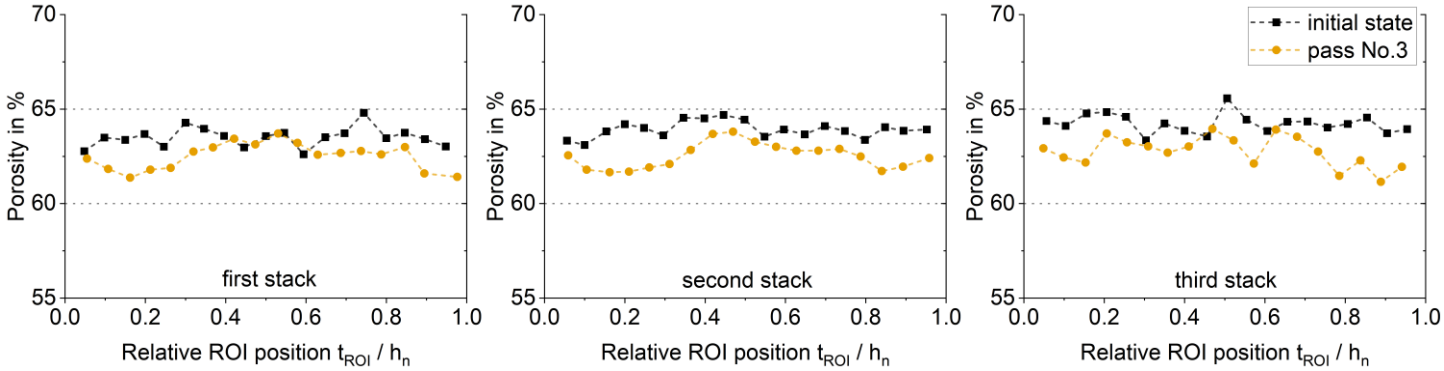

Figure S12. Series II: 5-0.05-3 ($l_d/h_m \approx 0.57$-0.62): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

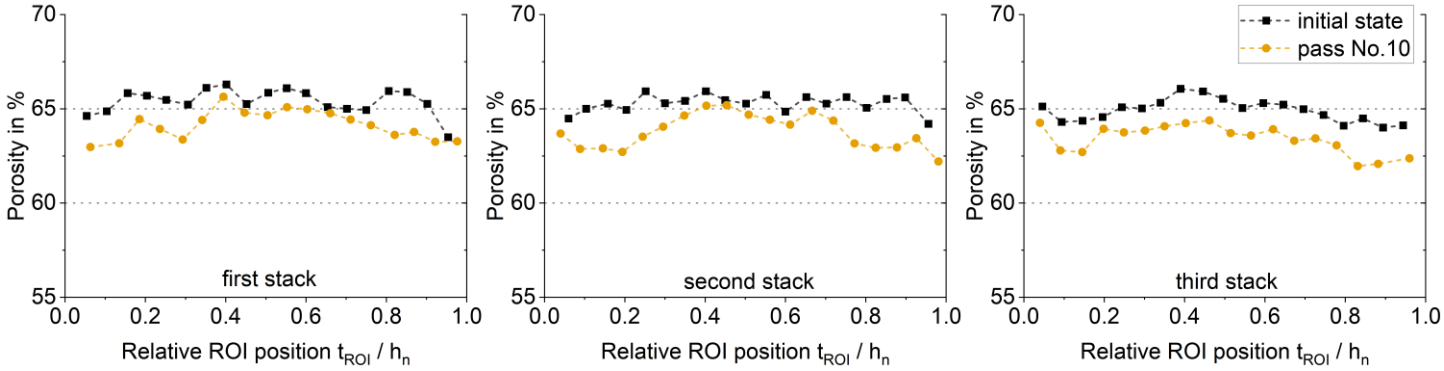

Figure S13. Series II: 5-0.05-10 ($l_d/h_m \approx 0.20$-0.45): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

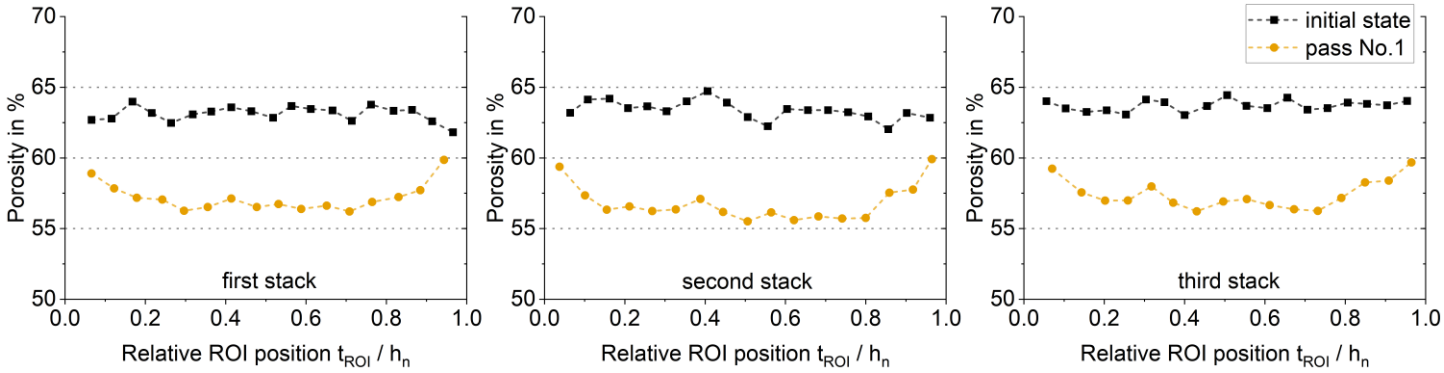

Figure S14. Series II: 5-0.15-1 ($l_d/h_m \approx 1.87$): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

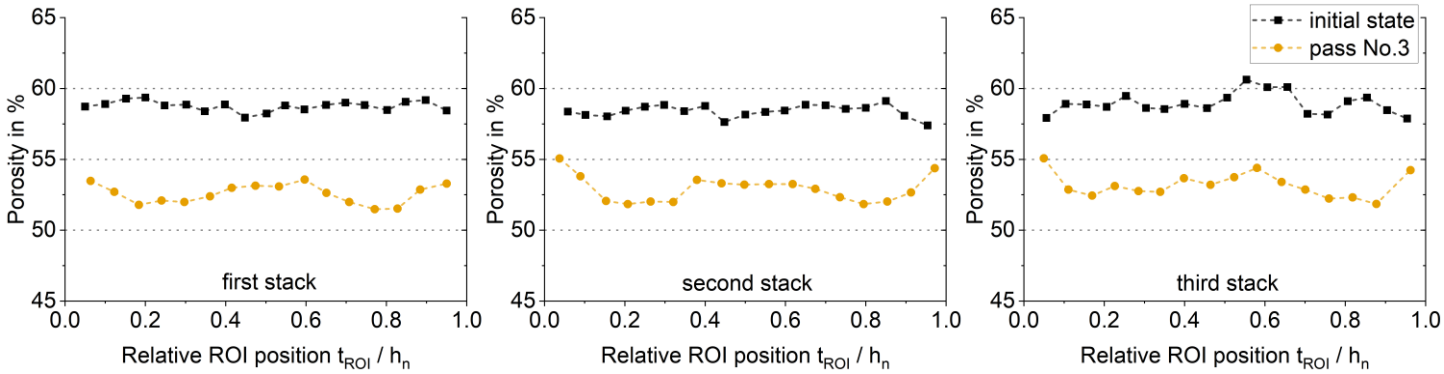

Figure S15. Series II: 5-0.15-3 ($l_d/h_m \approx 1.04$-1.15): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

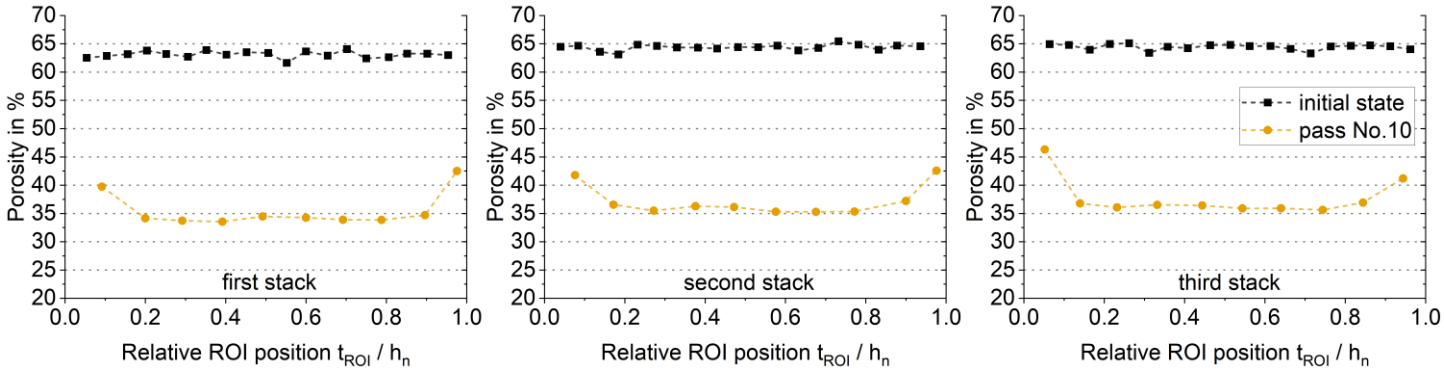

Figure S16. Series II: 5-0.50-10 ($l_d/h_m \approx 1.17$-1.64): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

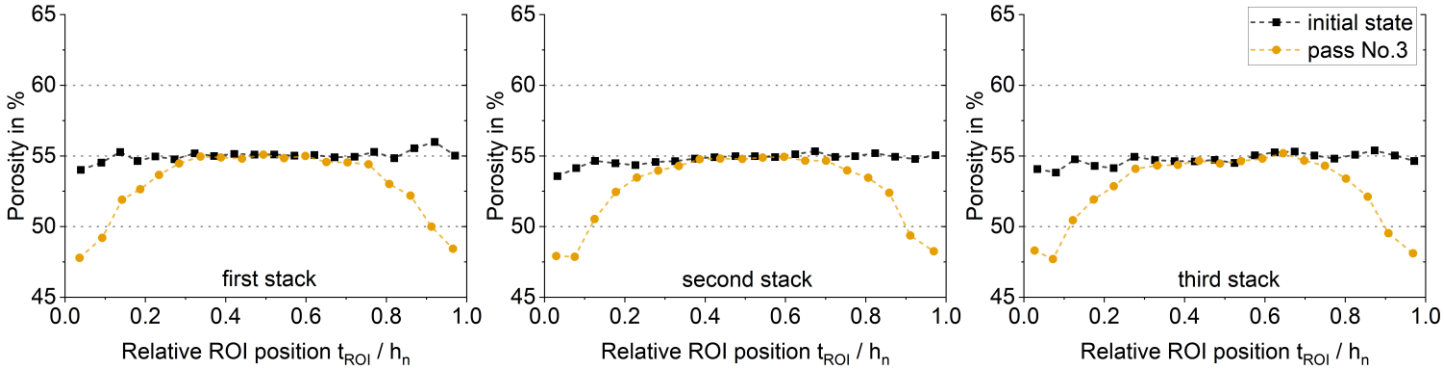

Figure S17. Series II: 20-0.05-3 ($l_d/h_m \approx 0.25$-0.33): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

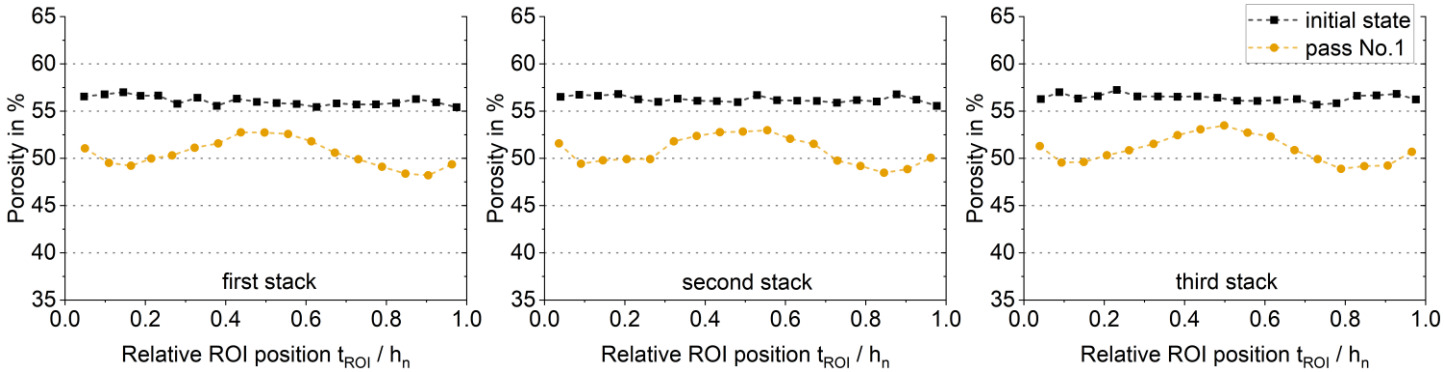

Figure S18. Series II: 20-0.15-1 ($l_d/h_m \approx 0.93$): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

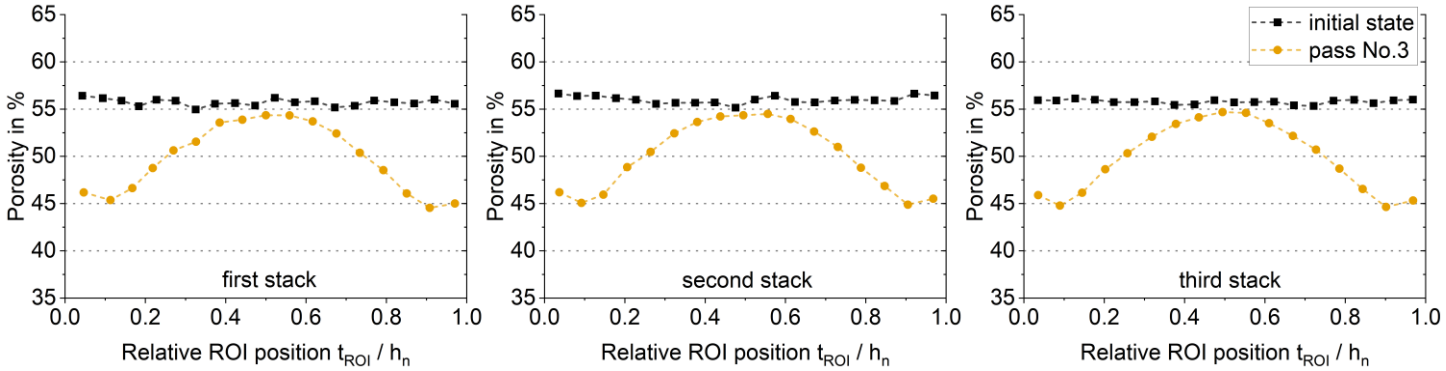

Figure S19. Series II: 20-0.15-3 (l_d/h_m ≈ 0.52-0.55): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.

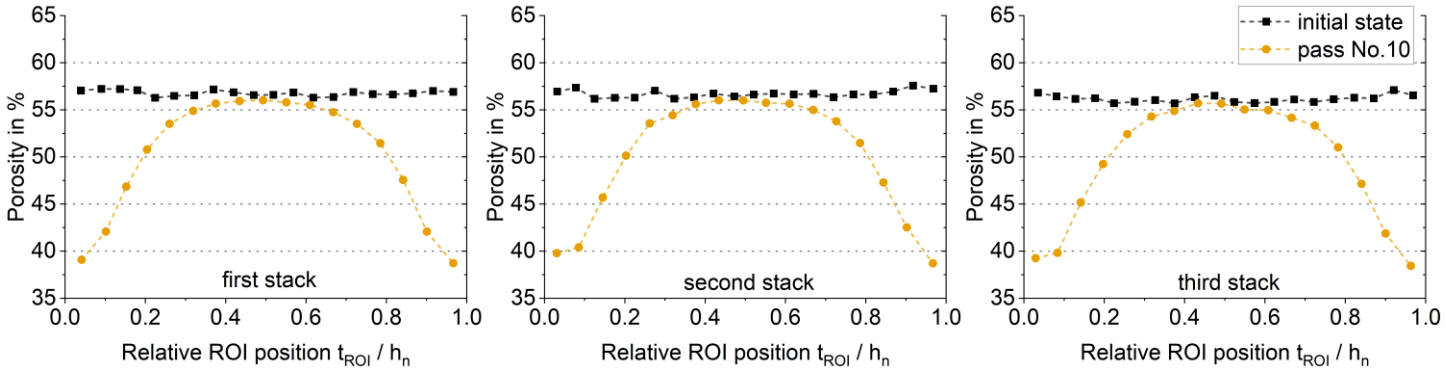

Figure S20. Series II: 20-0.15-10 (l_d/h_m ≈ 0.28-0.31): Porosity change over relative sample depth (0 = upper surface; 0.5 = mid-section of sample; 1 = lower surface) due to rolling for first, second and third stack.