

Horizontalni in vertikalni groovi 100 - 1000 nm

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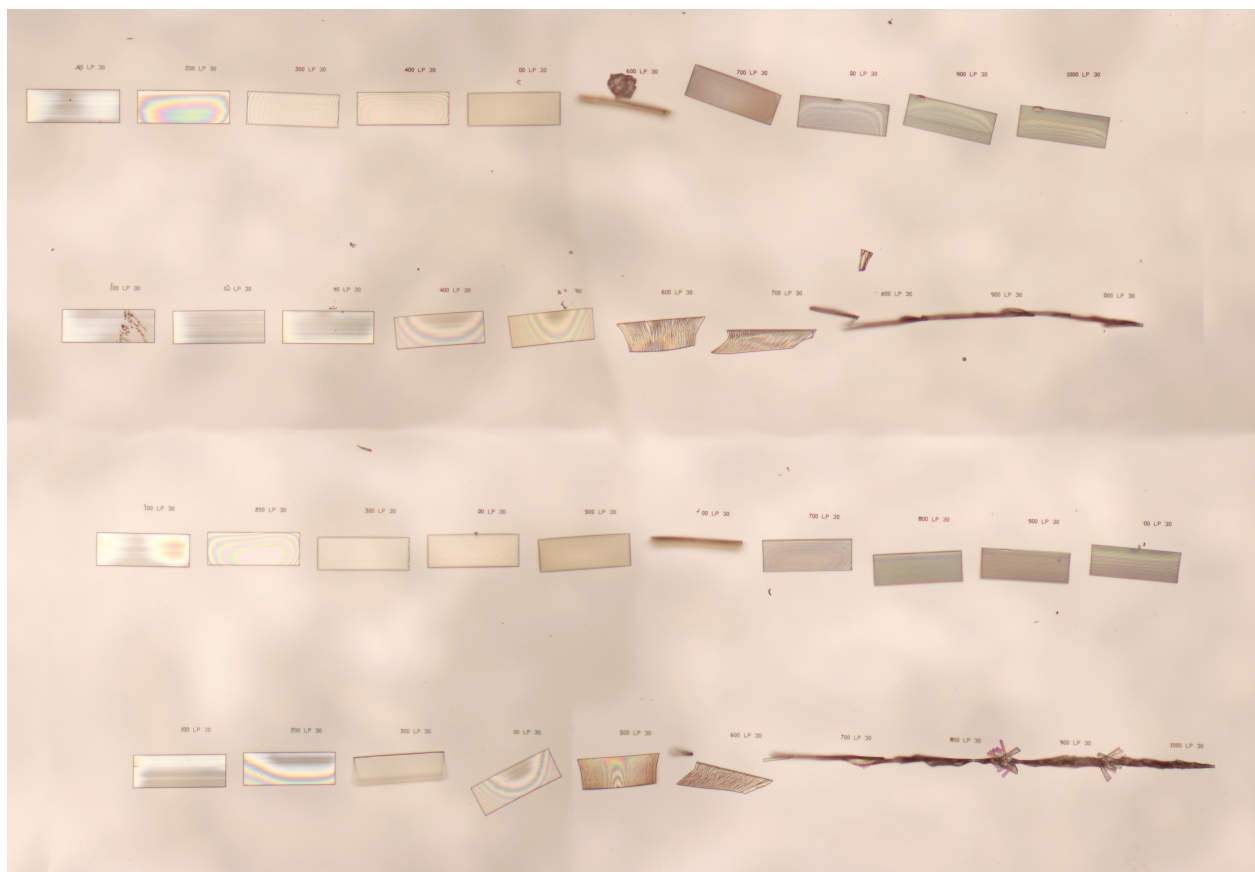


Figure 1: Vsi vzorci pod optičnim mikroskopom

Vsi afm posnetki (razen tretje vrstice) so narejeni tako, da so groovi na sliki vertikalni, torej je afm pri vsi vrstici prečkal vse groove.

Vsi posnetki so narejeni v tapping mode, 1 Hz, velikost slike 3 x 3 um. Prvo vrstico sem najprej slikal s contact modeom, vendar se ni nič videlo, zato sem vse nadaljne naredil v tapping modeu, ter nato ponovil meritev prve vrstice.

1. in 3. vrstica - horizontalni groovi

Horizontalni groovi se dobro vidijo pri pitchih 700 - 1000 nm. Morda so tudi pri 600 nm, vendar je pri obeh vrsticah (prvi in tretji) vzorec s 600 nm uničen (naključje?).

Pri vzorcih 100 - 500 nm groovov ni videti, se pa pri 300 - 500 nm morda vidijo groovi v vertikalni smeri, zato sem naredil posnetke pod kotom 90 stopinj.

1. vrstica:

vrstica [nm]	so groovi	pitch [nm]	pitch pravokotno [nm]	globina [nm]
100	ne	/	/	/
200	ne	/	/	/
300	ne?	/	350	/
400	ne?	/	450	/
500	ne?	1200	462	/
600	ne	/	/	/
700	ja	726	/	45
800	ja	835	/	60
900	ja	915	/	/
1000	ja	1035	/	100

3. vrstica:

vrstica [nm]	so groovi	pitch [nm]	globina [nm]
100	ne	/	/
200	ne	/	/
300	ne	/	/
400	ja	/	/
500	ja	1200	/
600	ne	/	/
700	ja	726	45
800	ja	835	60
900	ja	915	/
1000	ja	1035	100

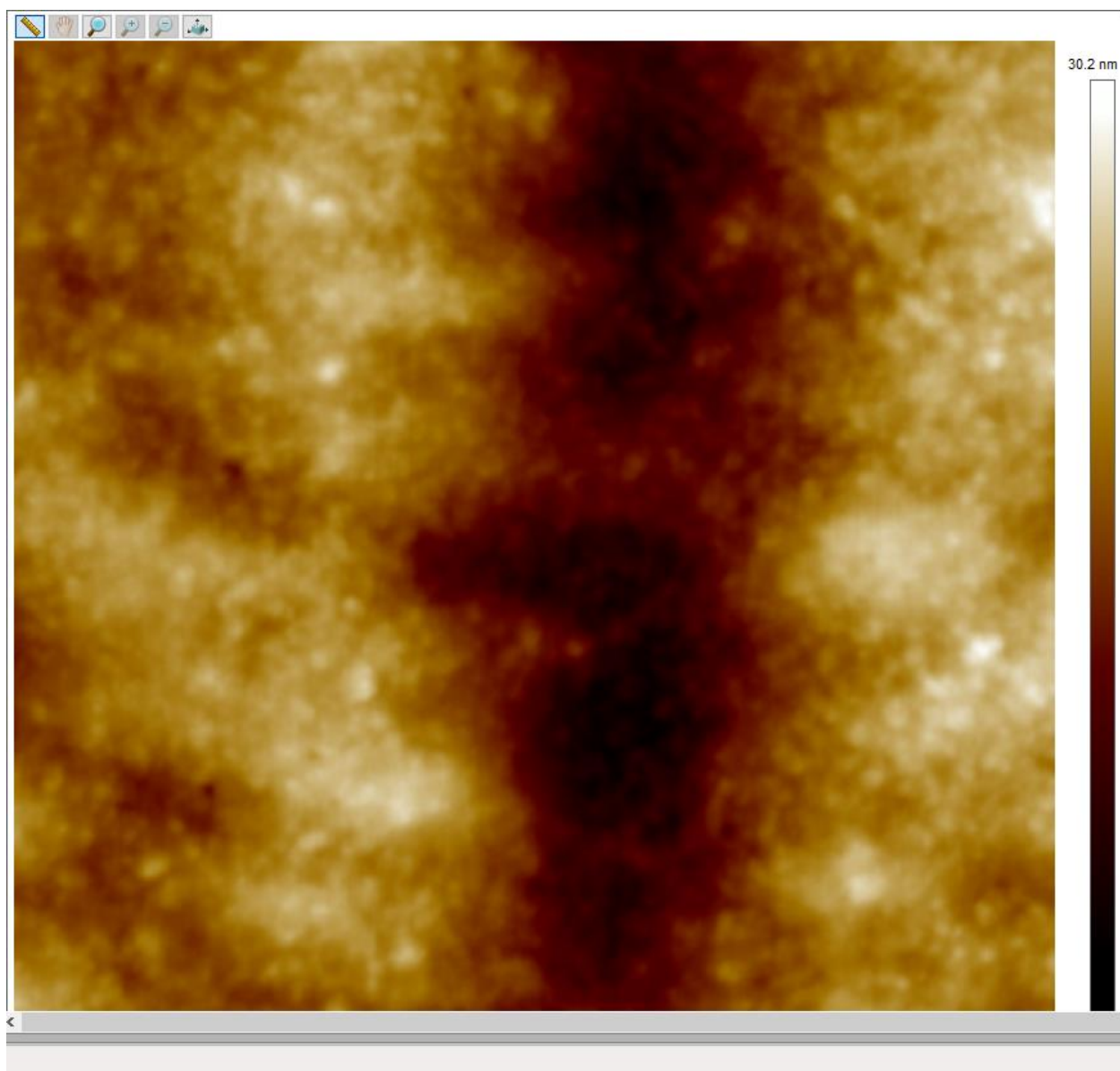


Figure 2: Horizontalni 1 100nm

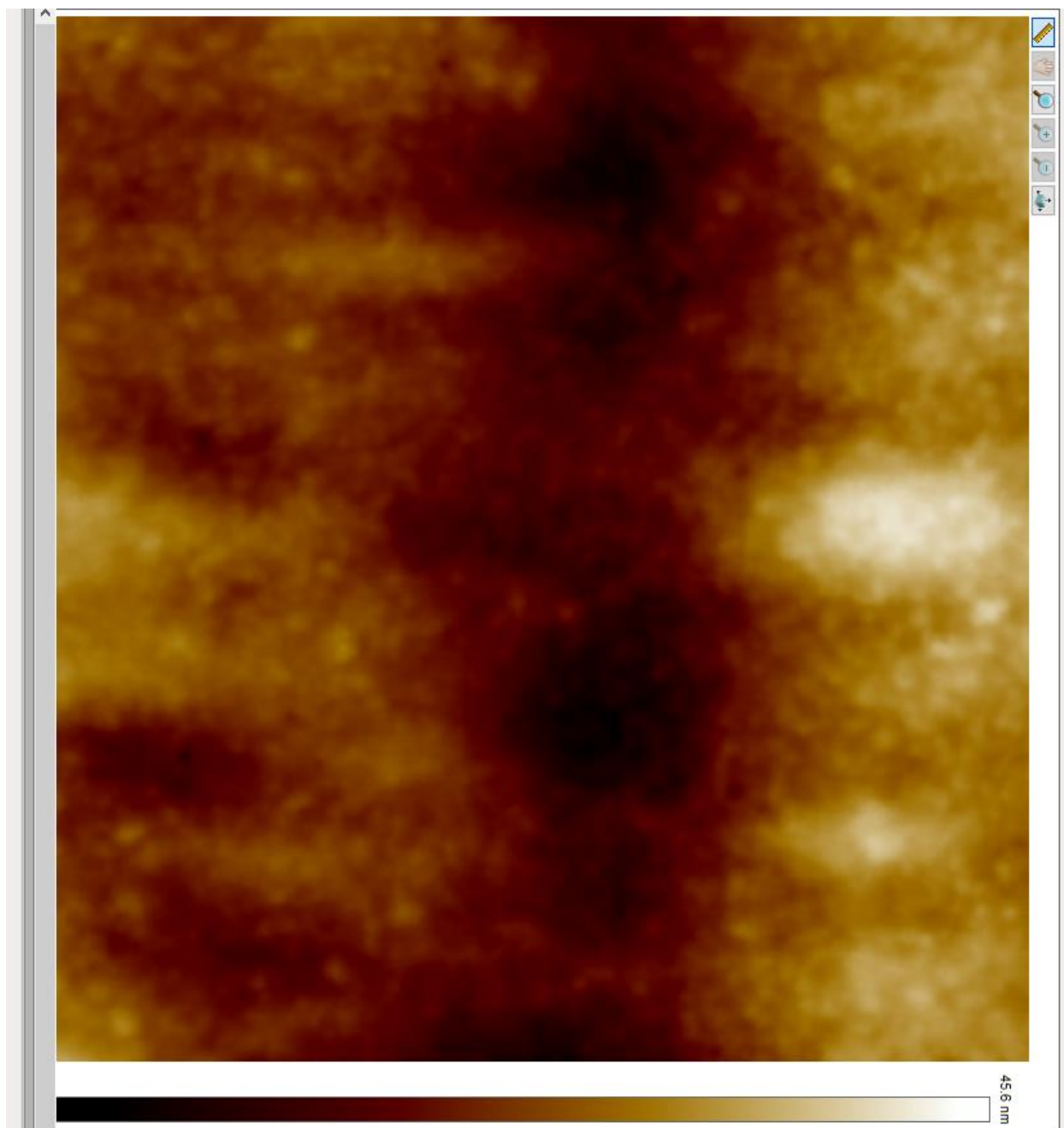


Figure 3: Horizontalni 1 100nm pravokotno

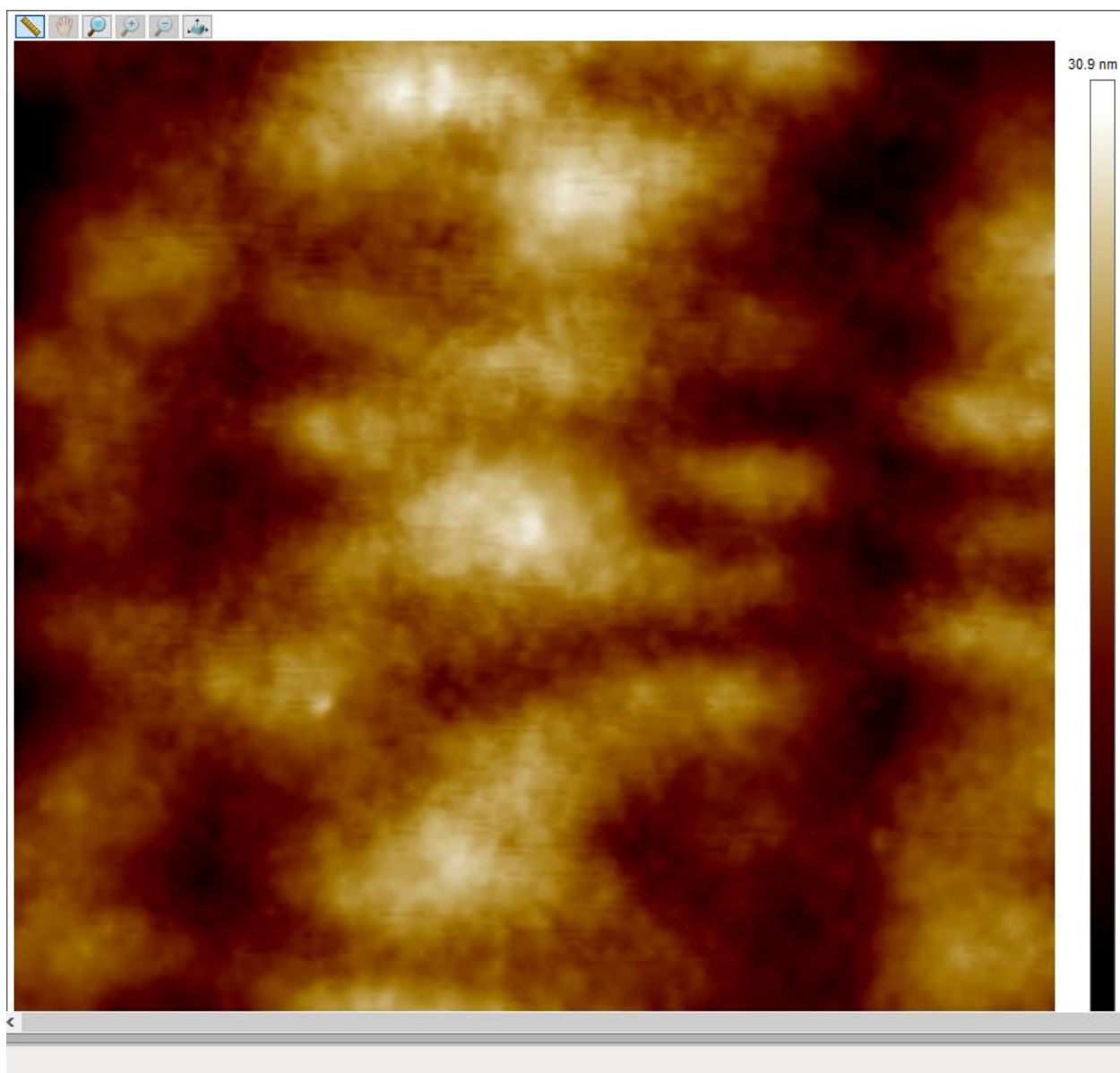


Figure 4: Horizontalni 3 100nm

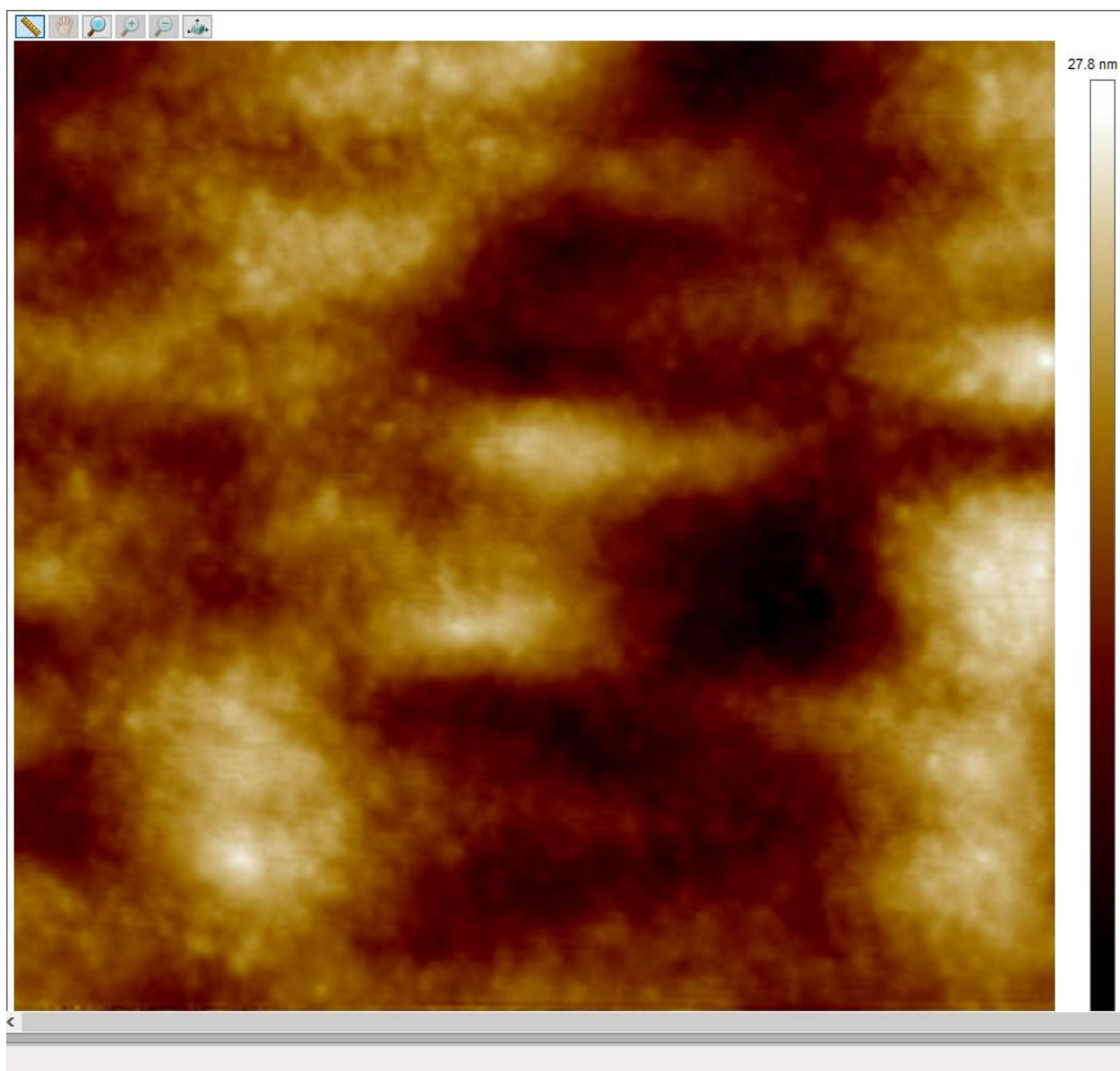


Figure 5: Horizontalni 1 200nm

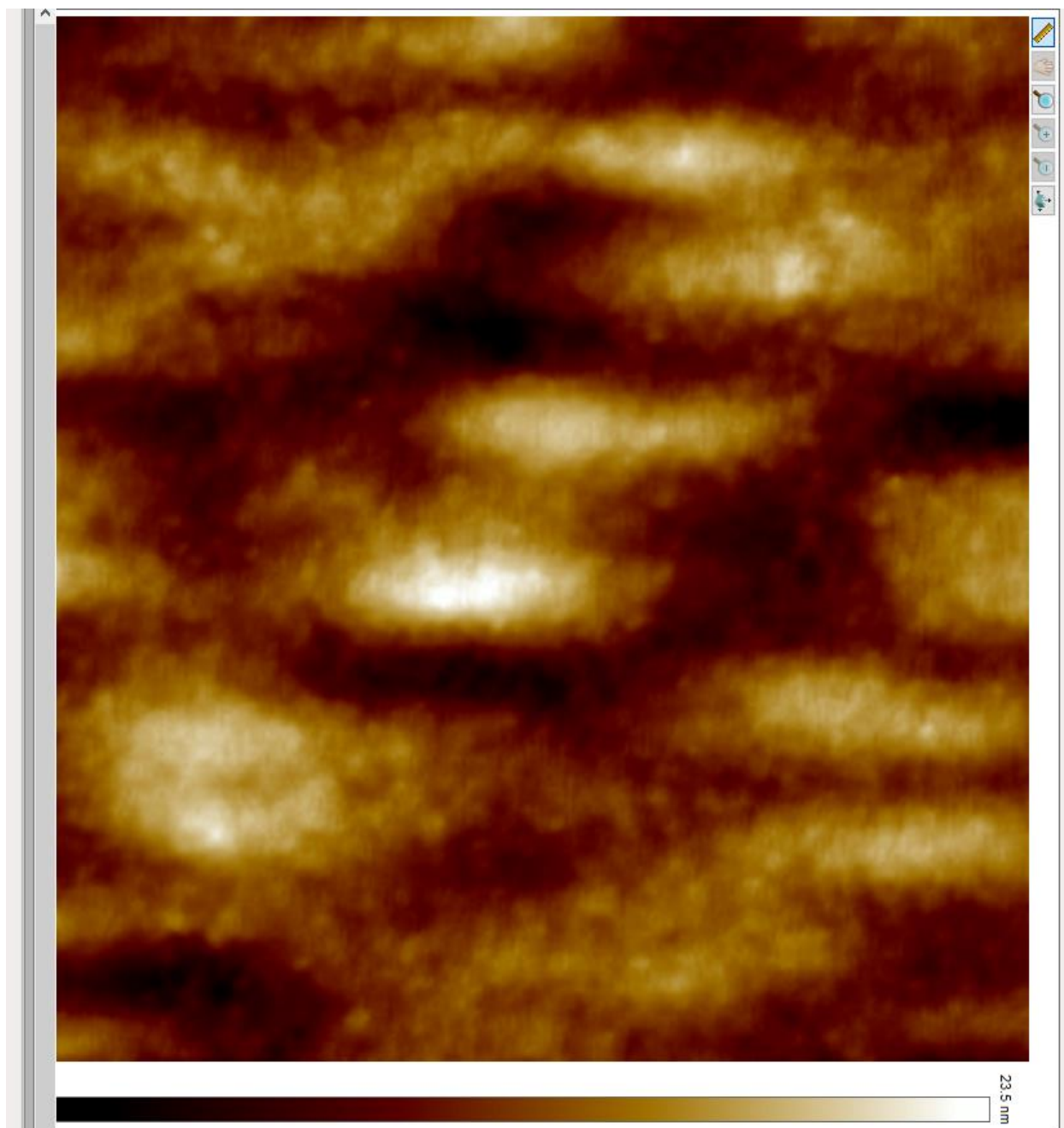


Figure 6: Horizontalni 1 200nm pravokotno

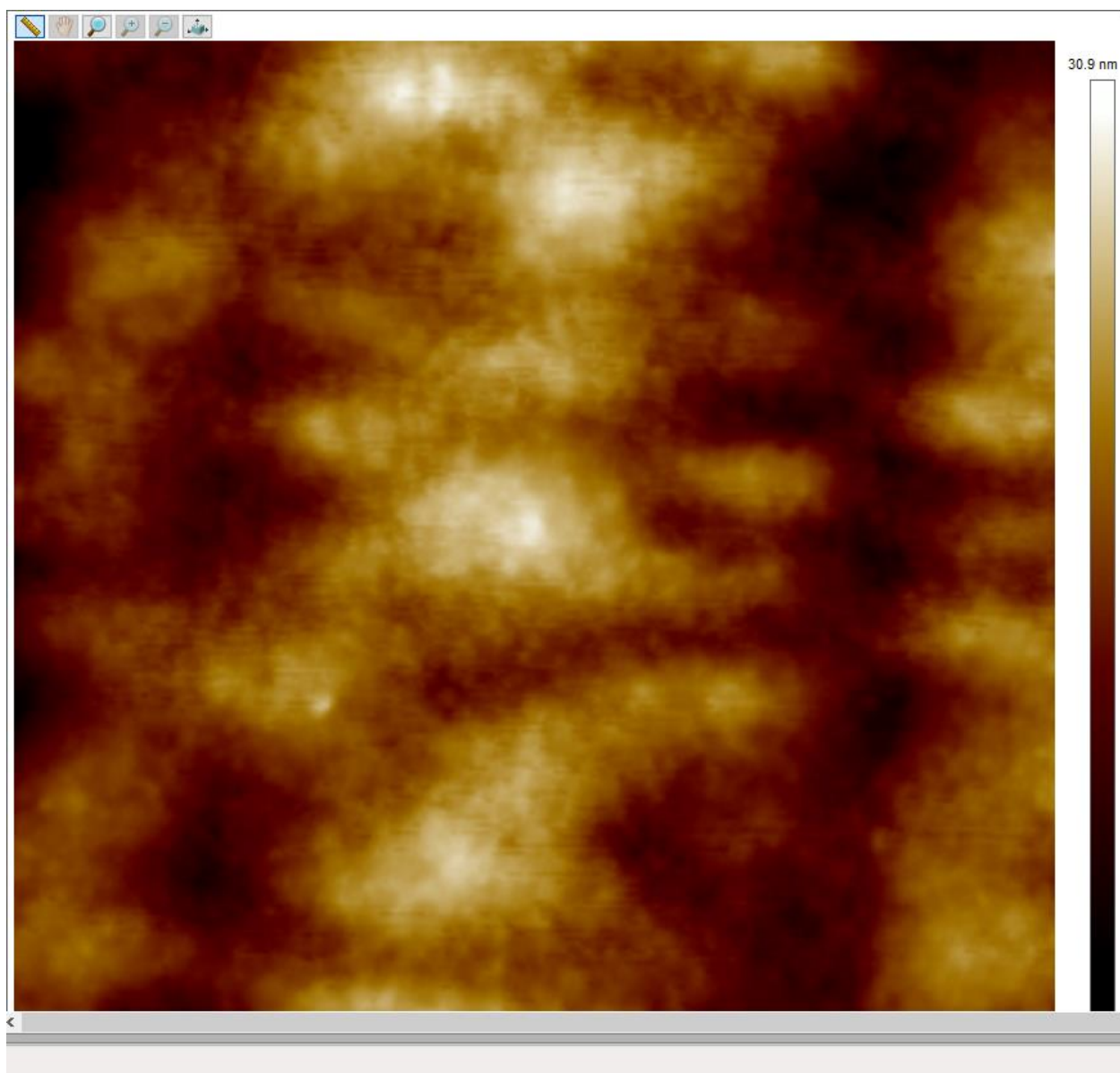


Figure 7: Horizontalni 1 300nm

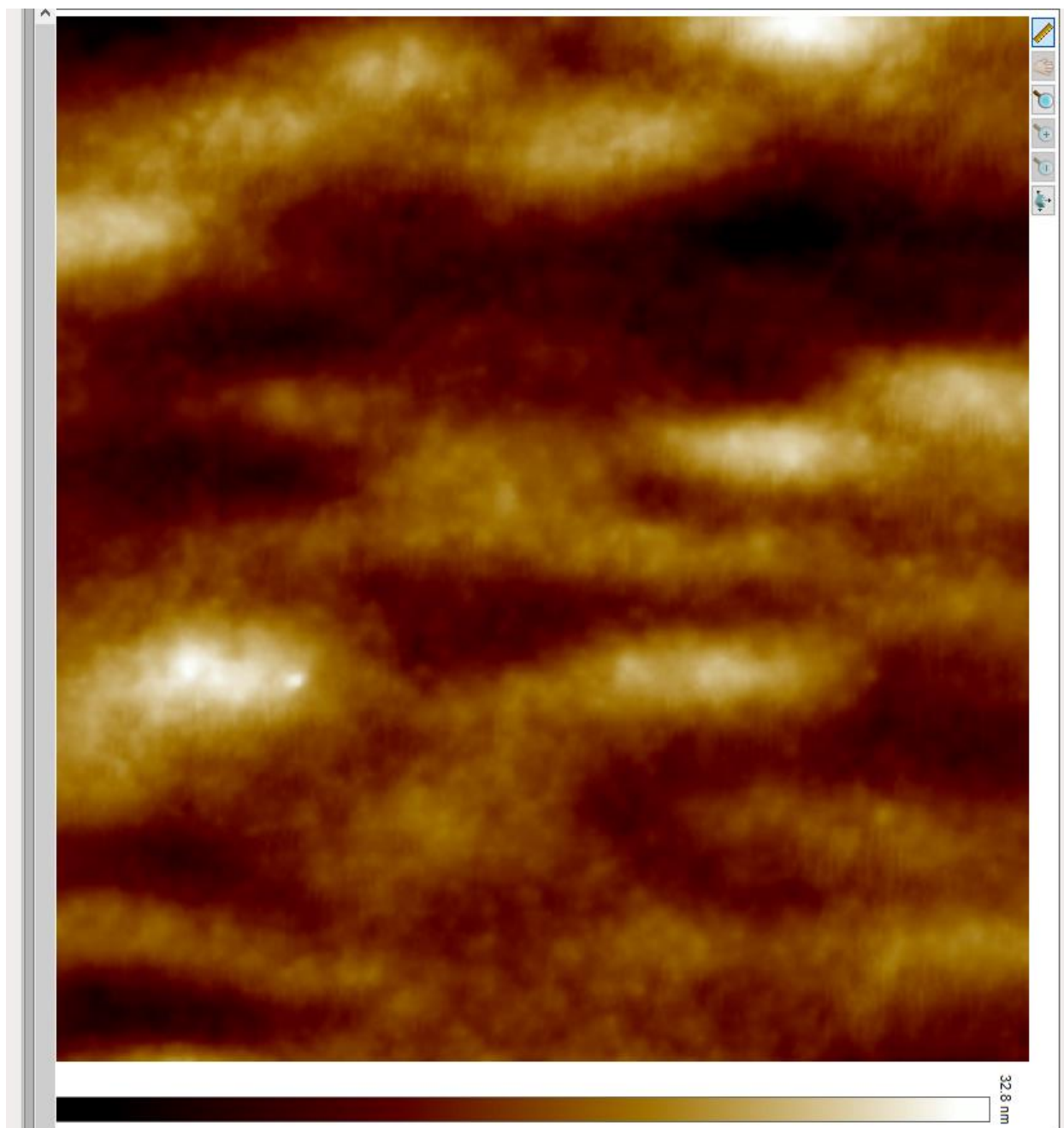


Figure 8: Horizontalni 1 300nm pravokotno

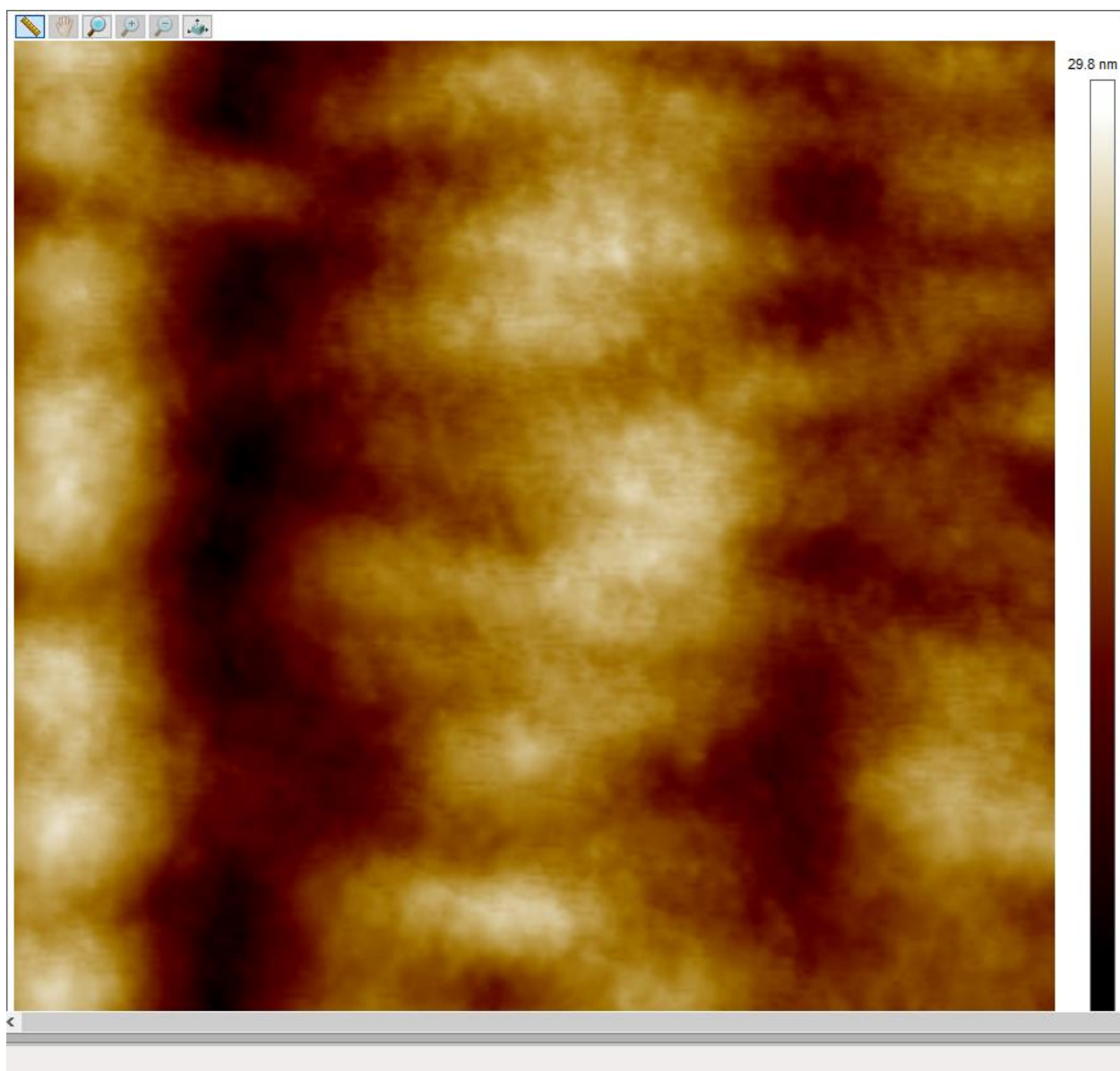


Figure 9: Horizontalni 1 400nm

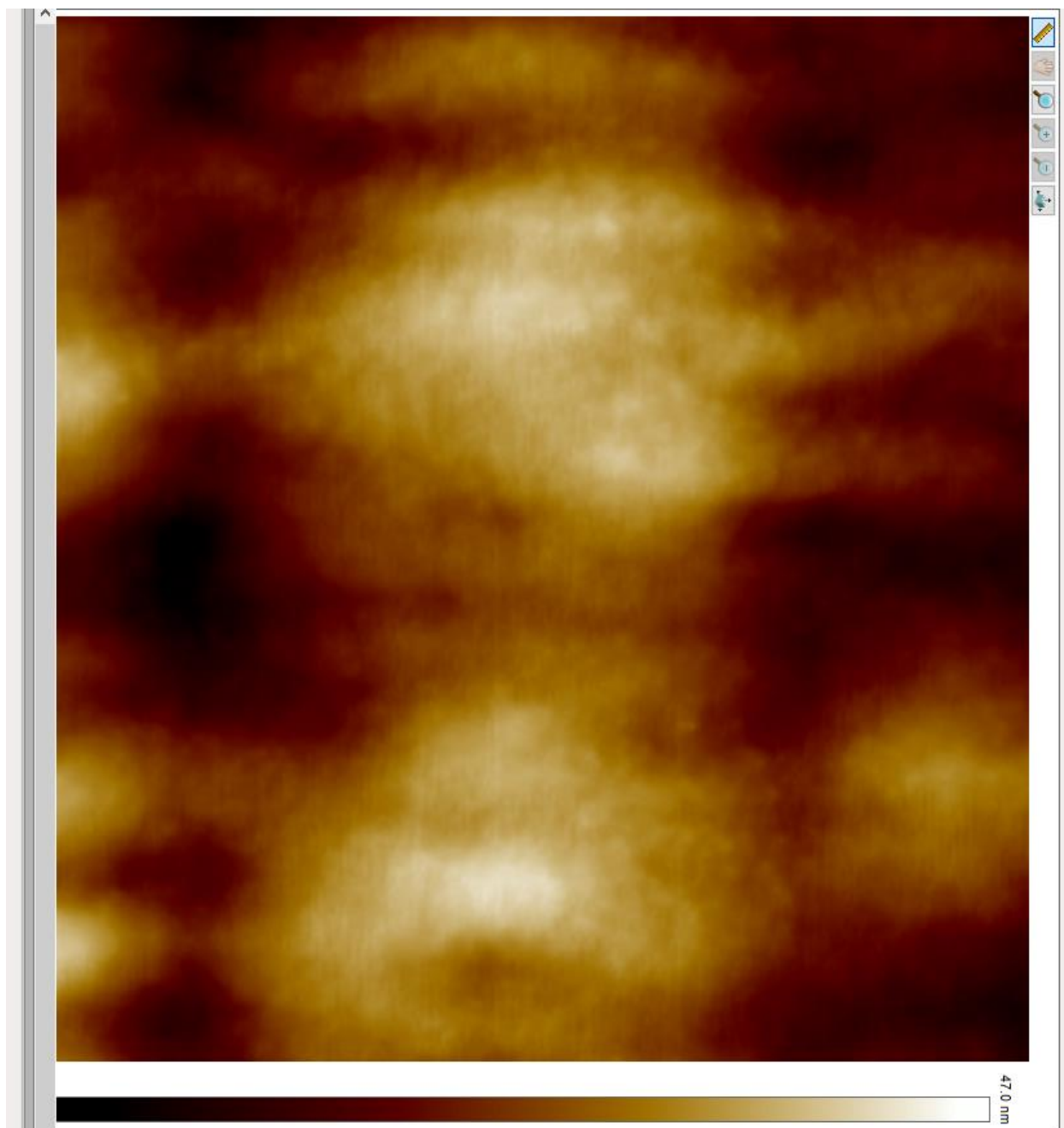


Figure 10: Horizontalni 1 400nm pravokotno

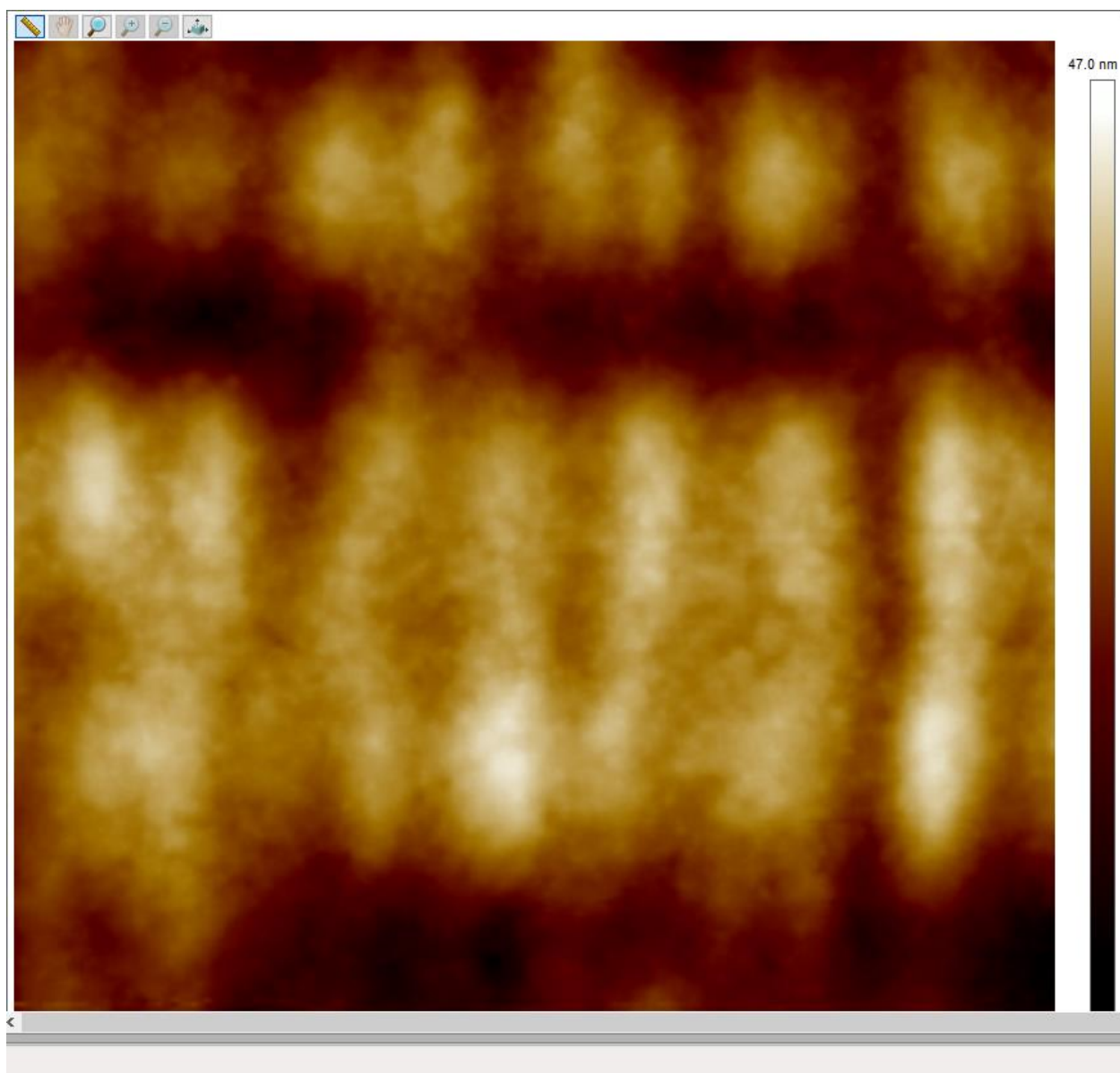


Figure 11: Horizontalni 3 400nm

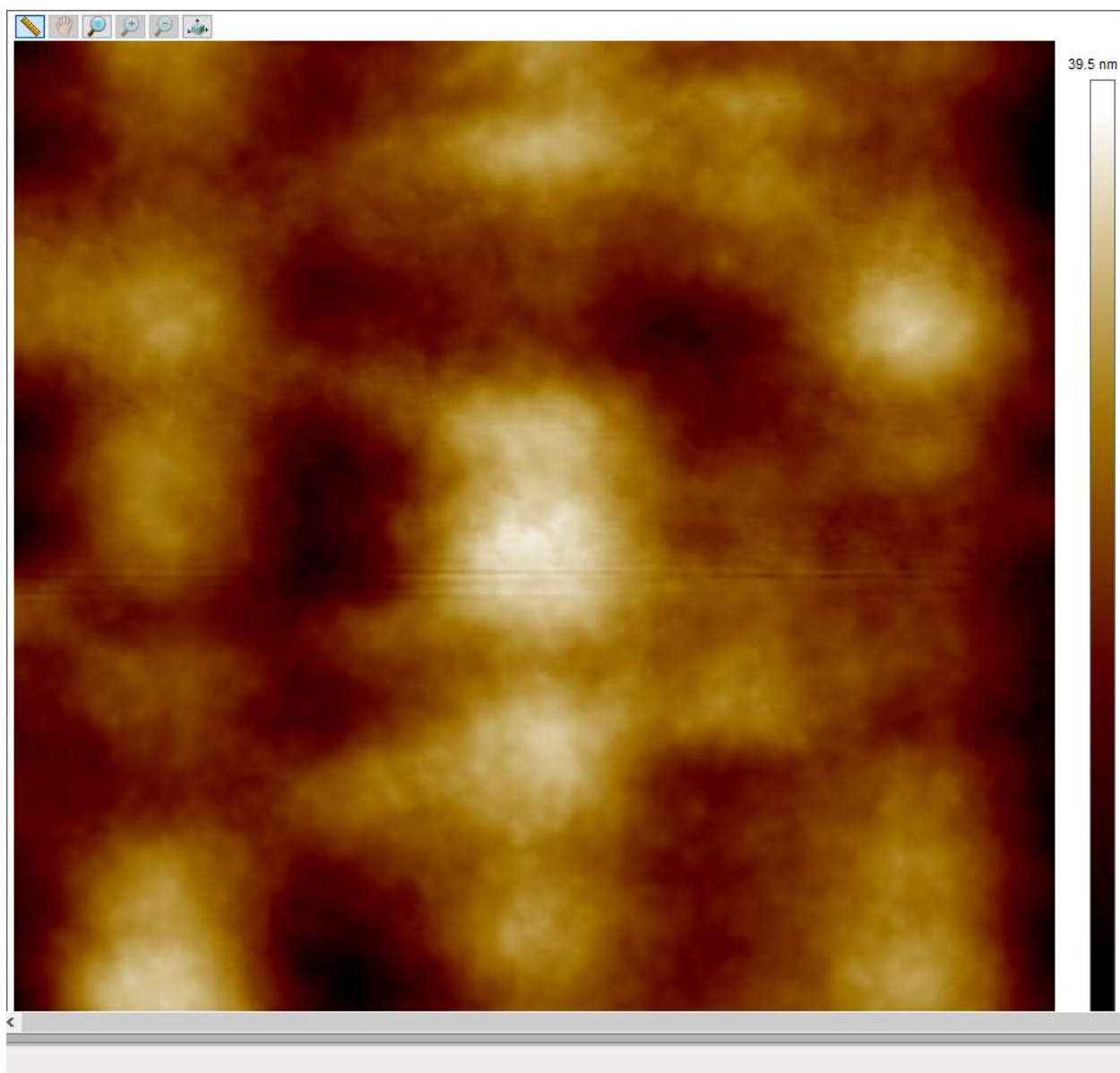


Figure 12: Horizontalni 1 500nm

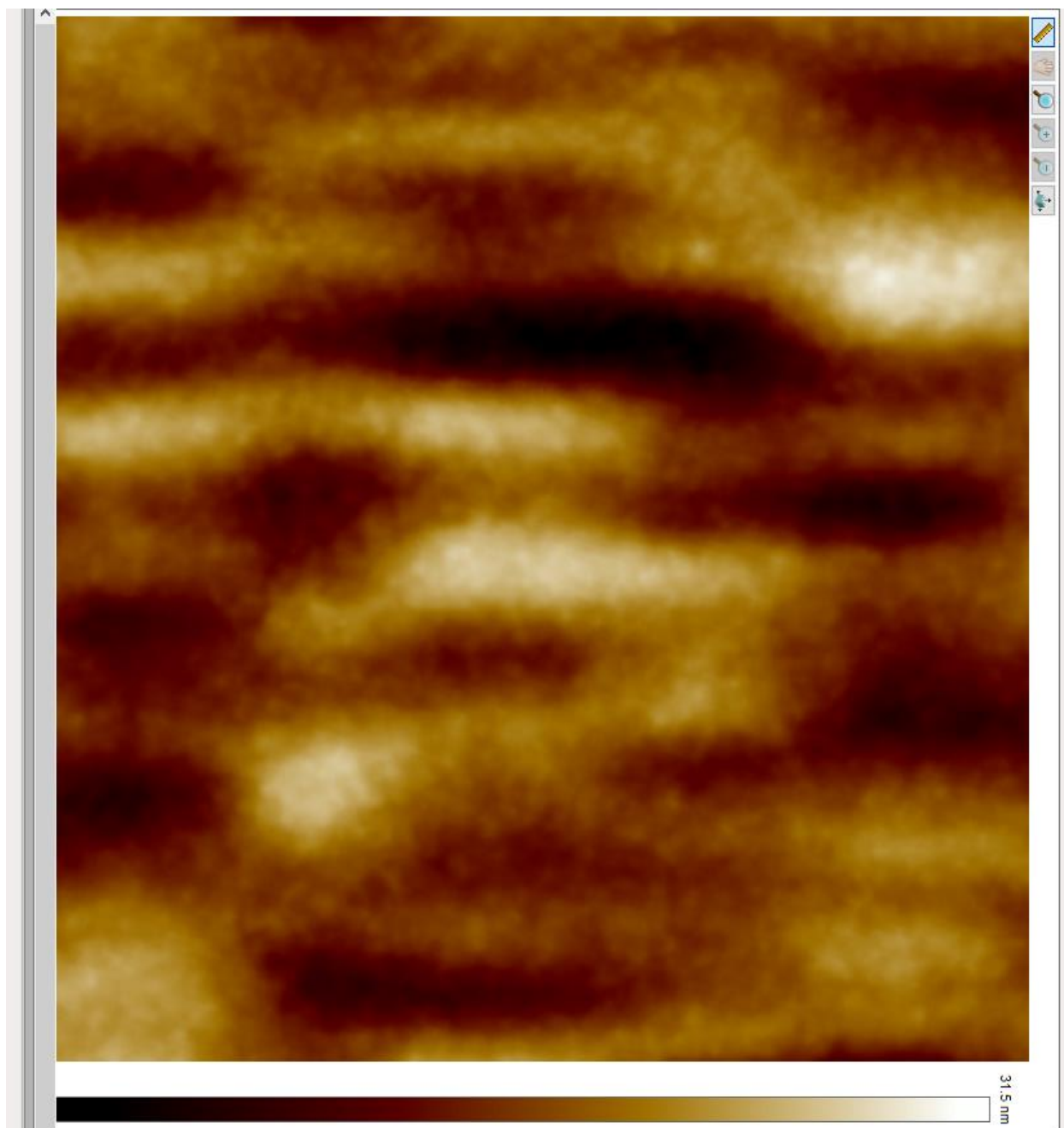


Figure 13: Horizontalni 1 500nm pravokotno

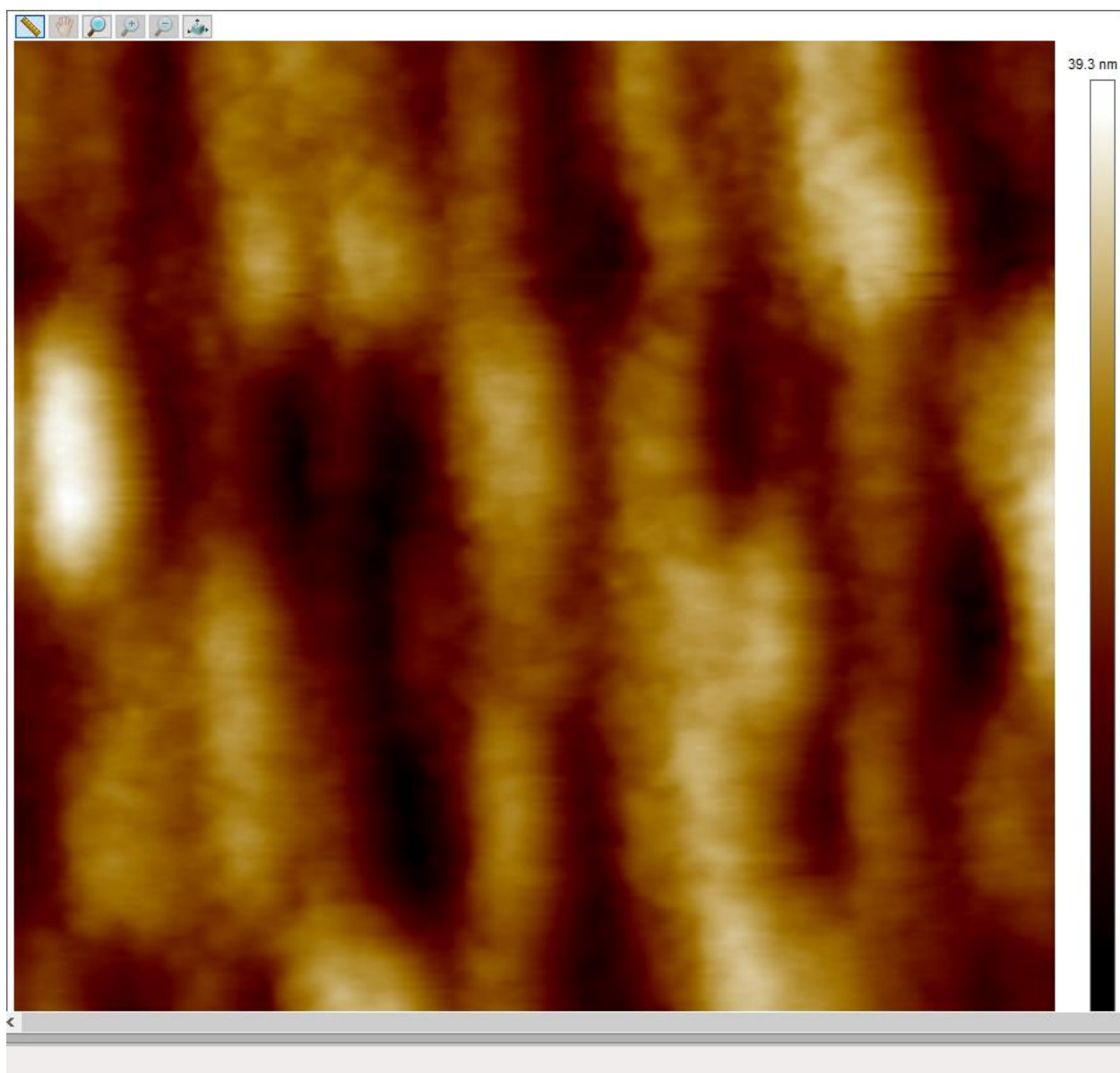


Figure 14: Horizontalni 3 500nm

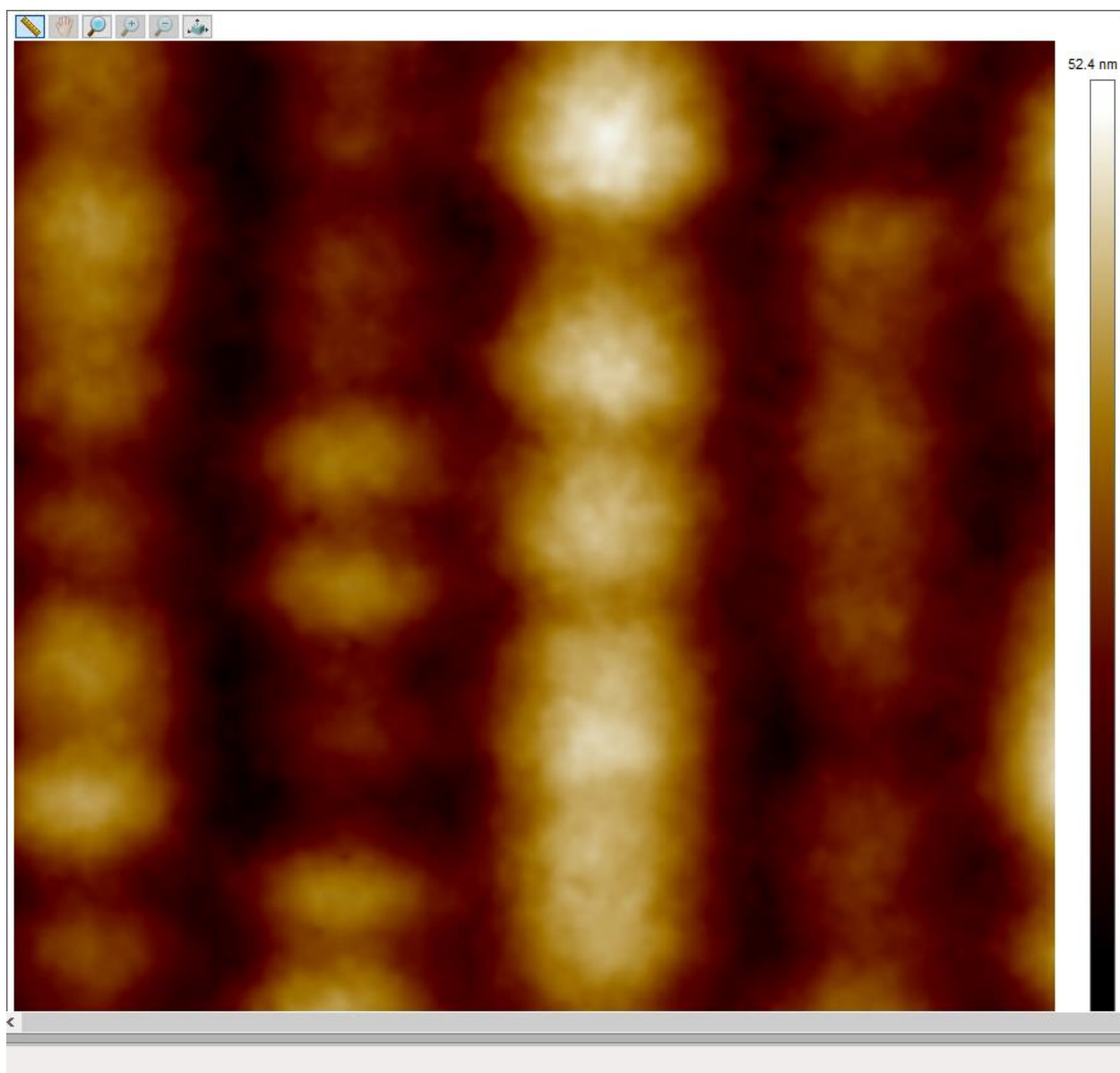


Figure 15: Horizontalni 1 700nm

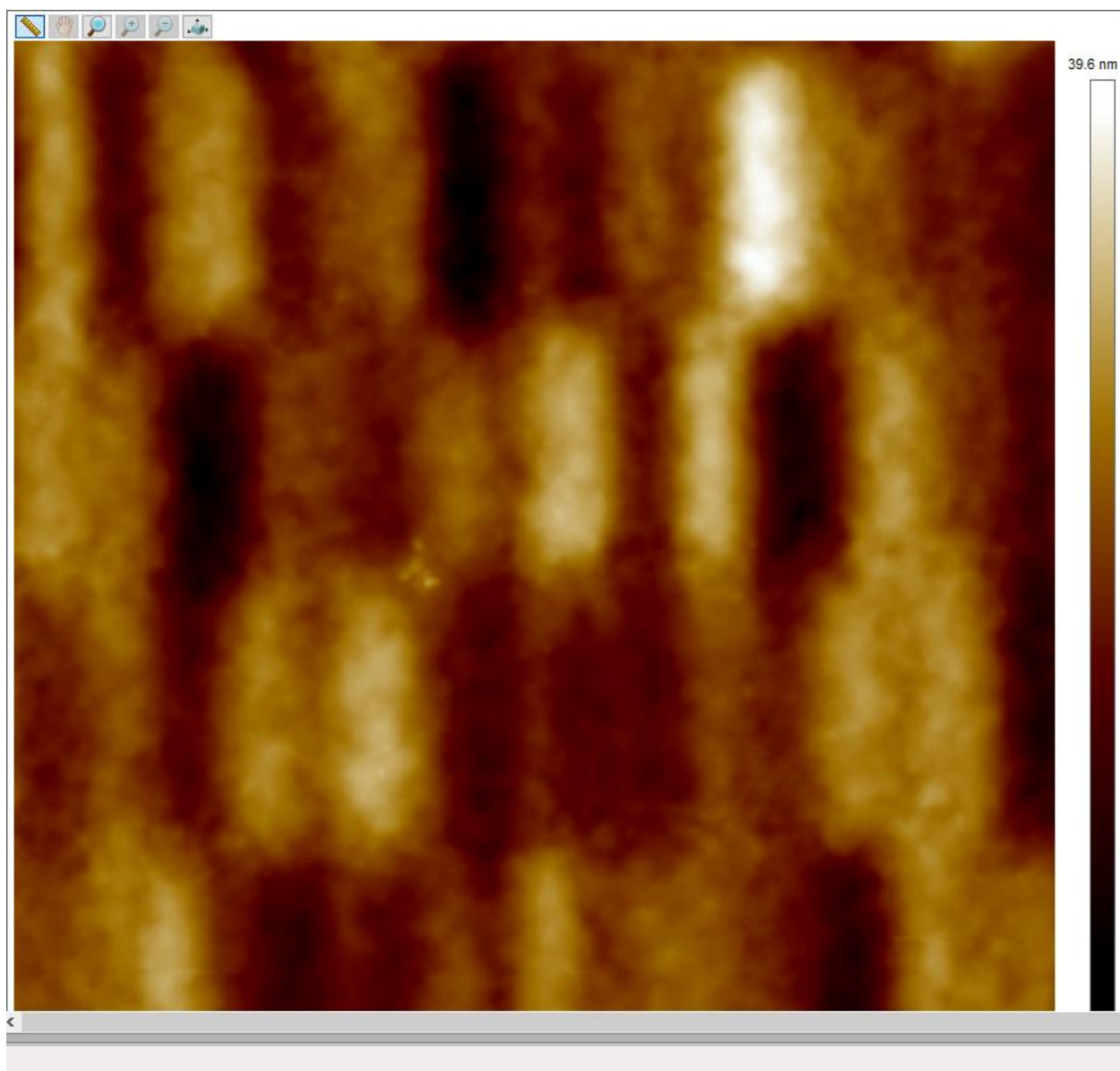


Figure 16: Horizontalni 3 700nm

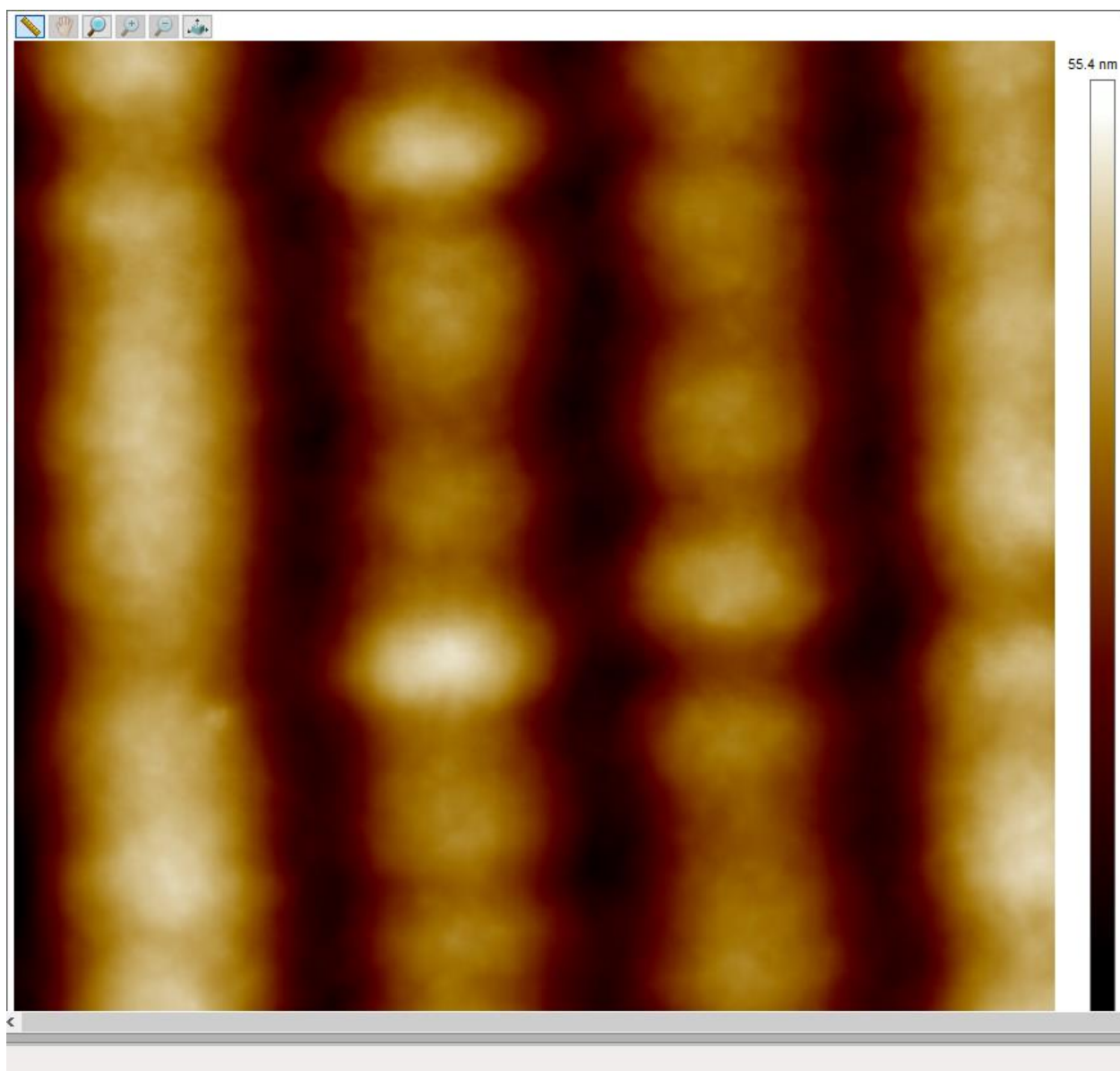


Figure 17: Horizontalni 1 800nm

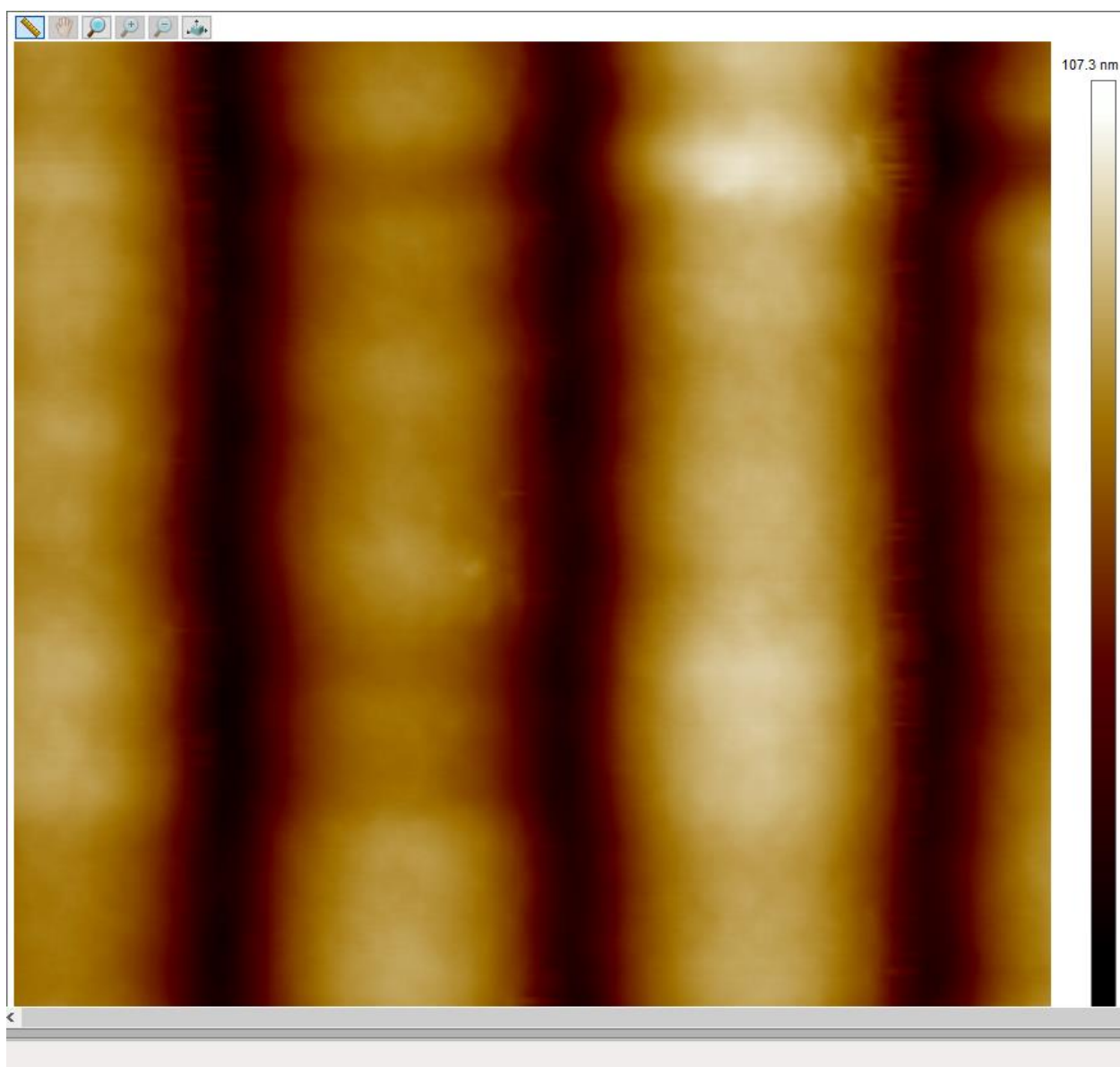


Figure 18: Horizontalni 1 1000nm

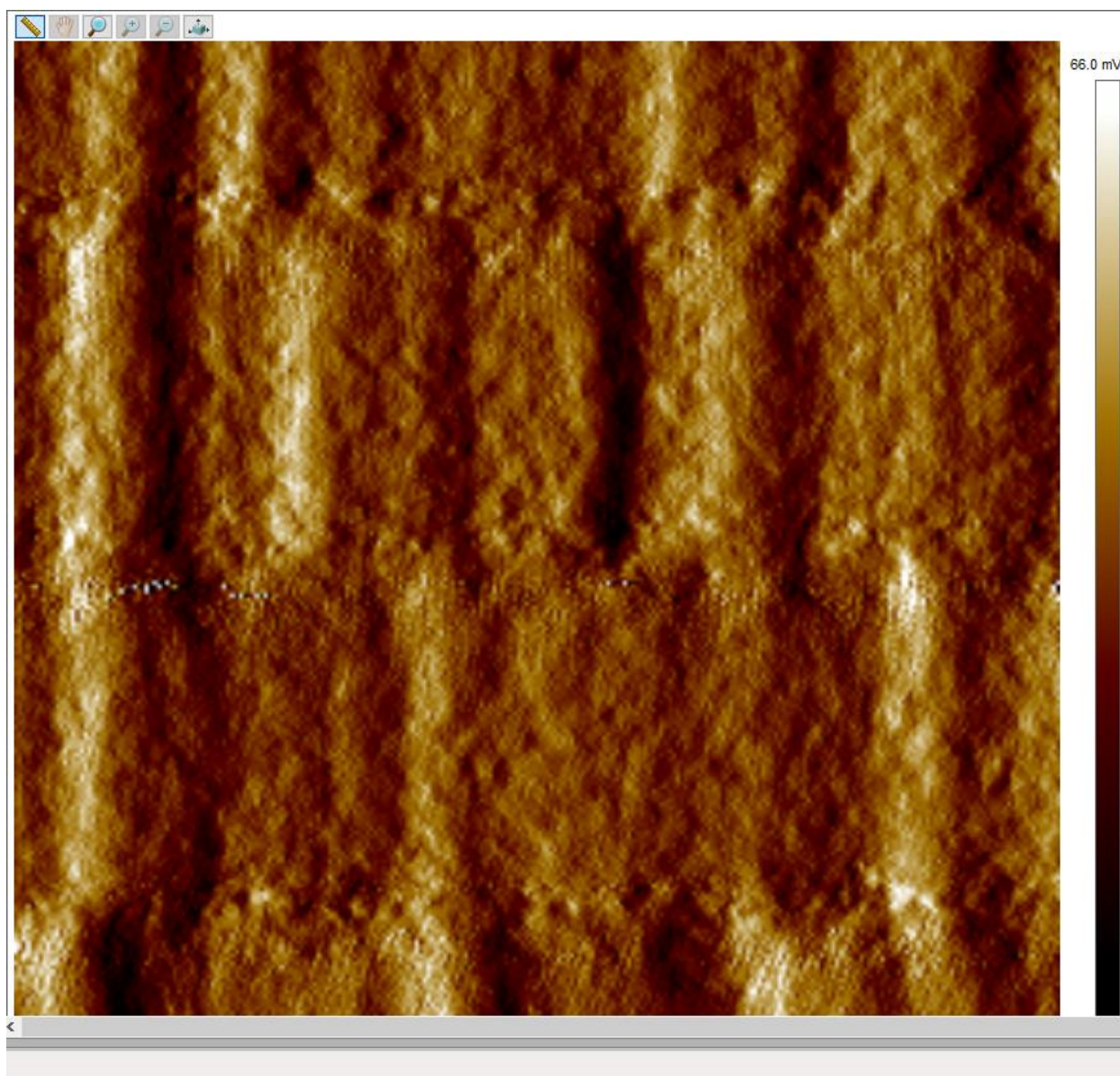


Figure 19: Horizontalni 3 1000nm

2. in 4. vrstica - vertikalni groovi

Pri 100 nm ni groovov. 200 - 500 nm so groovi dobro vidni. Od 600 nm naprej so vzorci bolj ali manj deformirani.

2. vrstica

vrstica [nm]	so groovi	pitch [nm]	globina [nm]
100	ne	/	/
200	ja	217	30
300	ja	324	50
400	ja	412	45
500	ja	482	120
600	ja	454	100
700	mogoče	350	200
800	ne	/	/
900	ne	/	/
1000	ne	/	/

4. vrstica

vrstica [nm]	so groovi	pitch [nm]	globina [nm]
100	ne	/	/
200	ja	214	40
300	ja	319	45
400	ja	410	70
500	ja?	413	100
600	ja?	350	80
700	ne	/	/
800	ne	/	/
900	ne	/	/
1000	ne	/	/

Zaključek

Vertikalni groovi so najboljše vidni med 200 - 500 nm, horizontalni pa med 700 - 1000 nm.

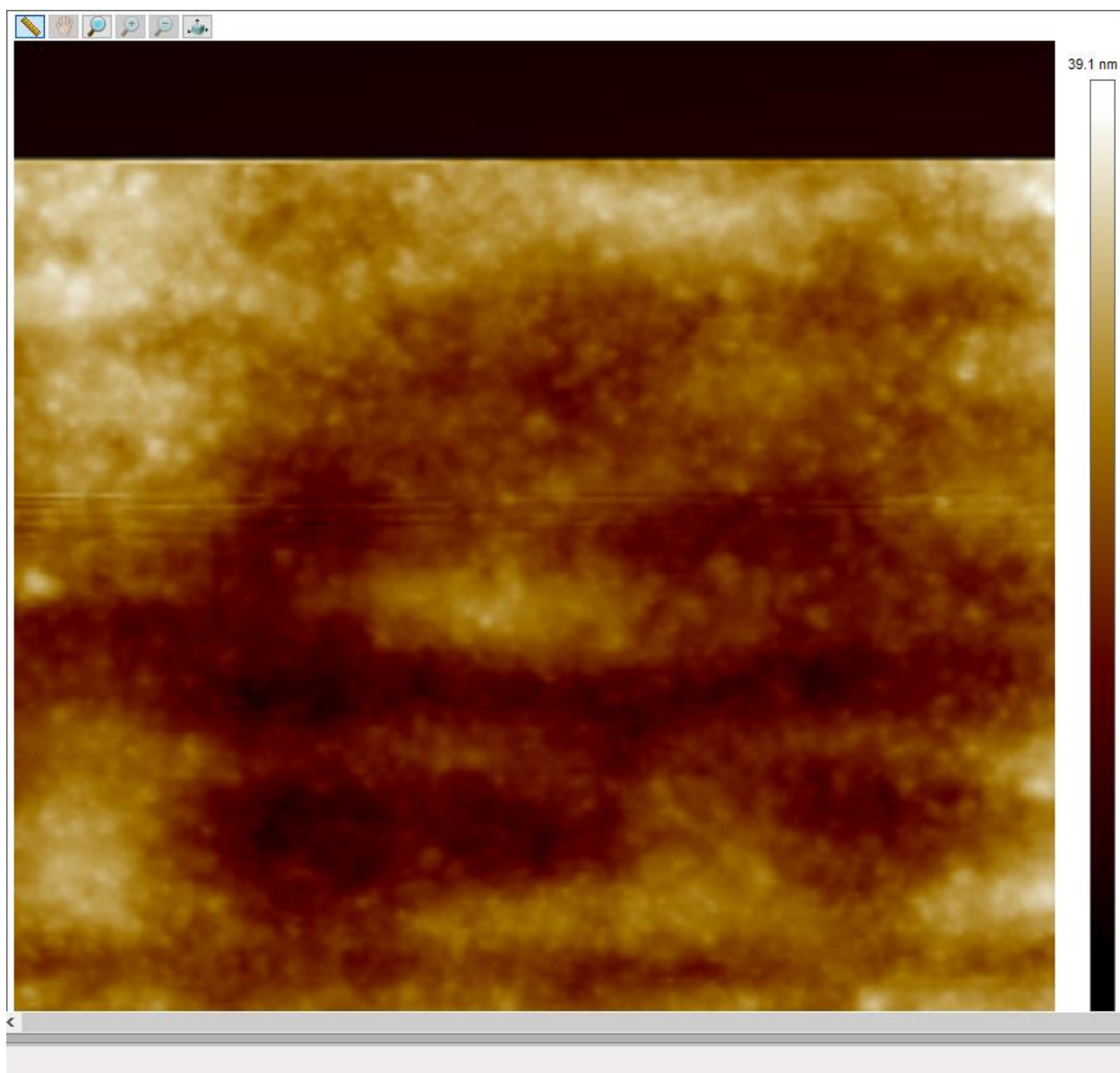


Figure 20: Vertikalni 2 100 nm

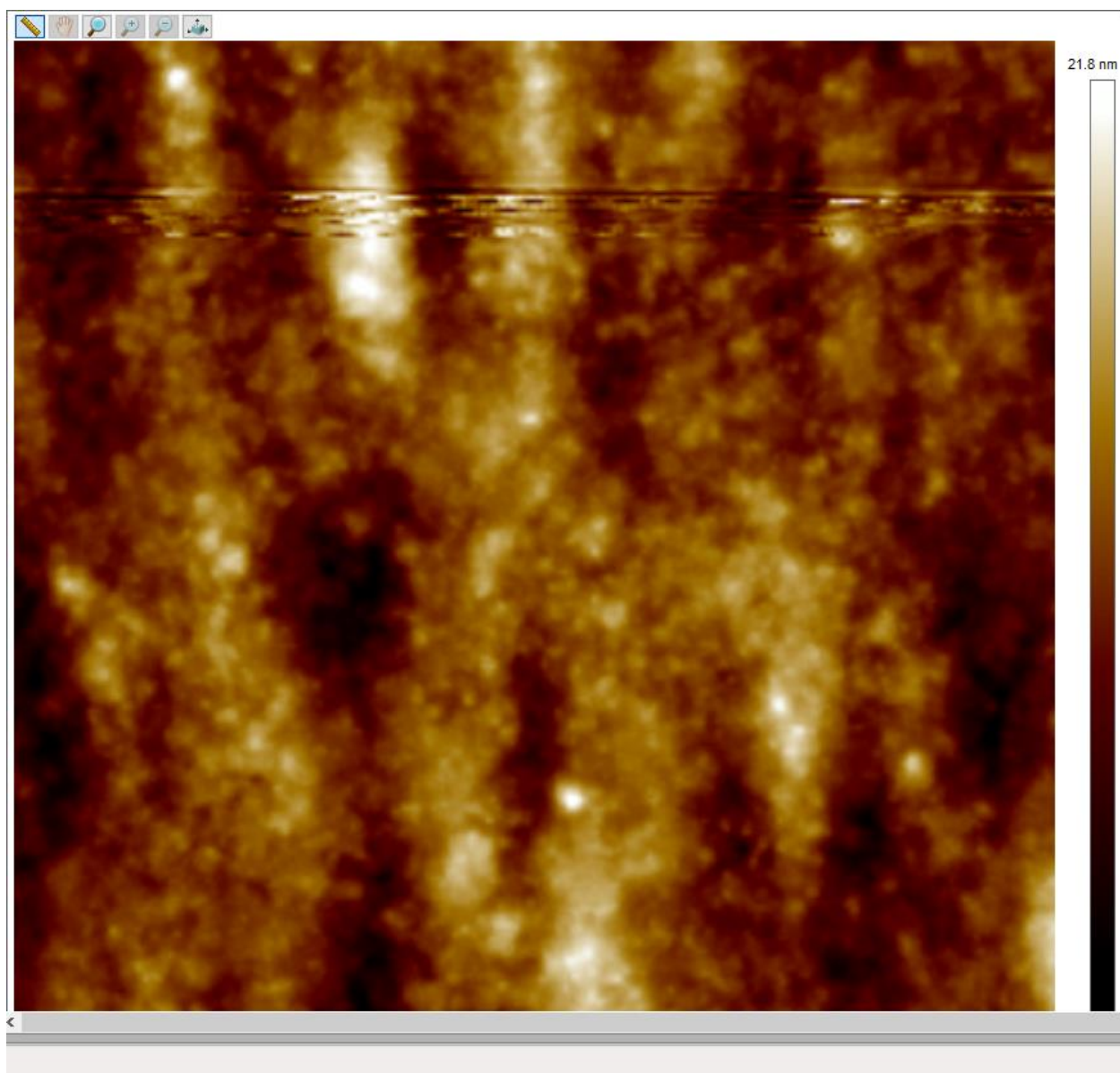


Figure 21: Vertikalni 4 100 nm

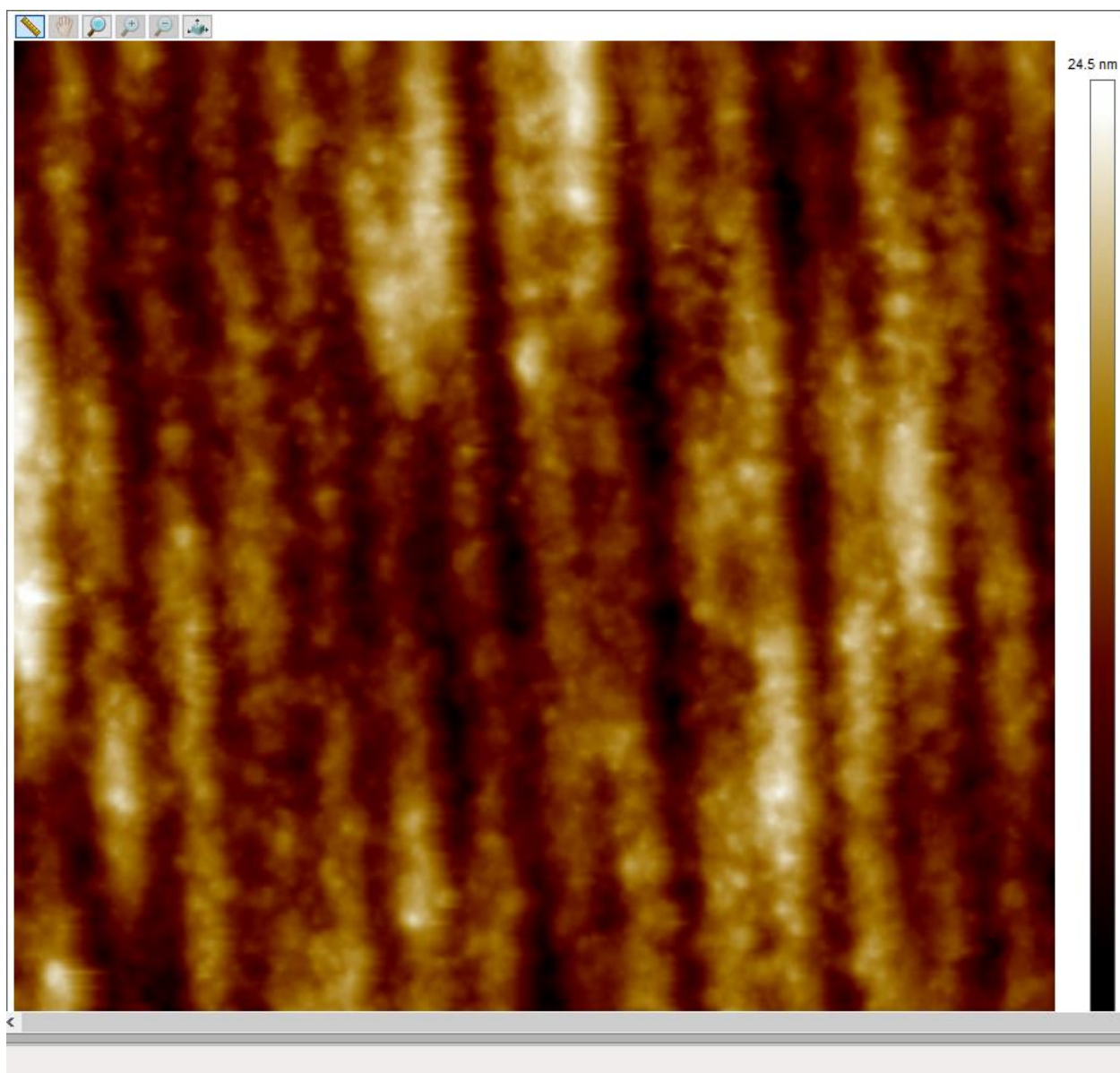


Figure 22: Vertikalni 2 200 nm

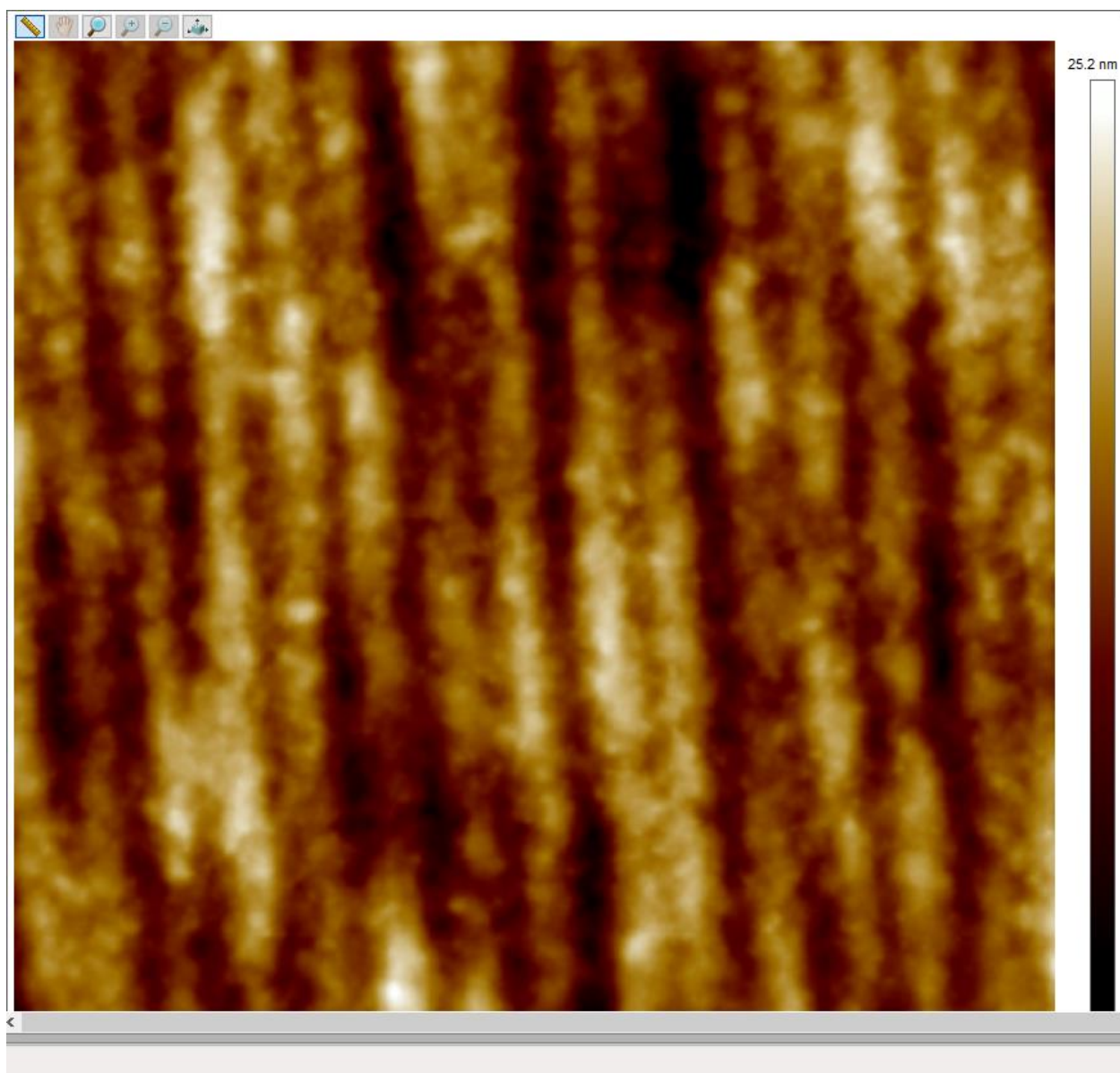


Figure 23: Vertikalni 4 200 nm

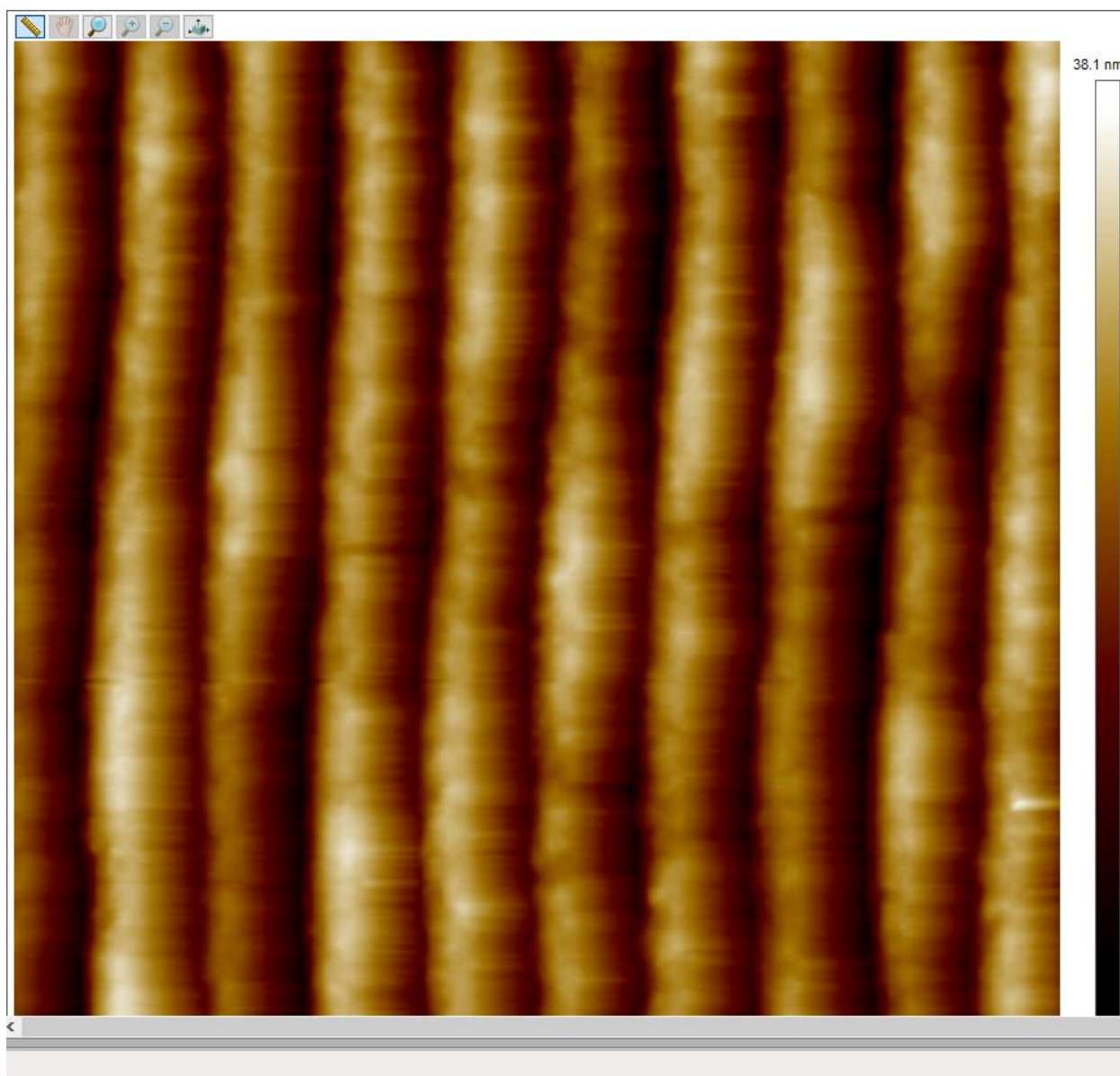


Figure 24: Vertikalni 2 300 nm

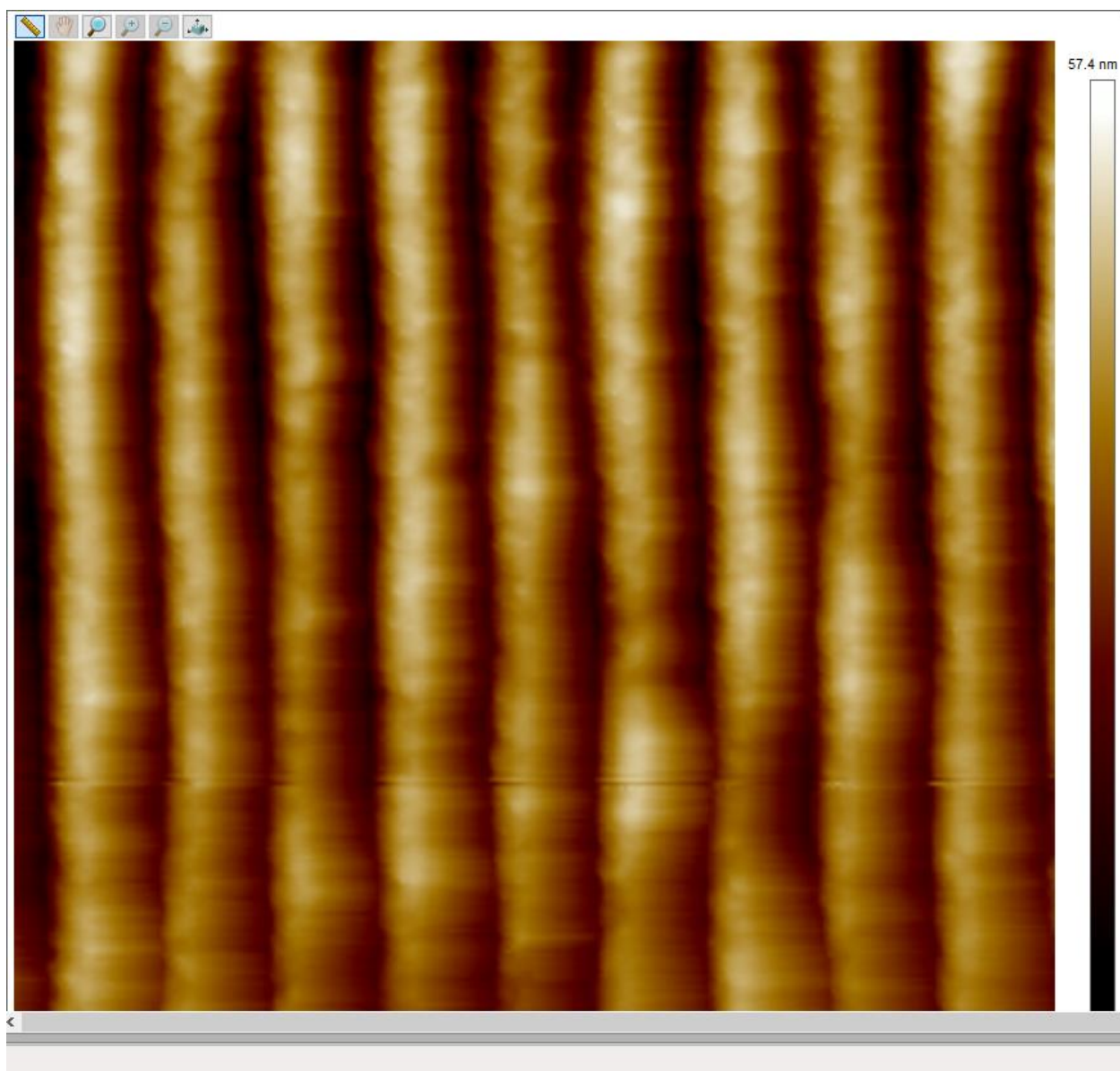


Figure 25: Vertikalni 4 300 nm

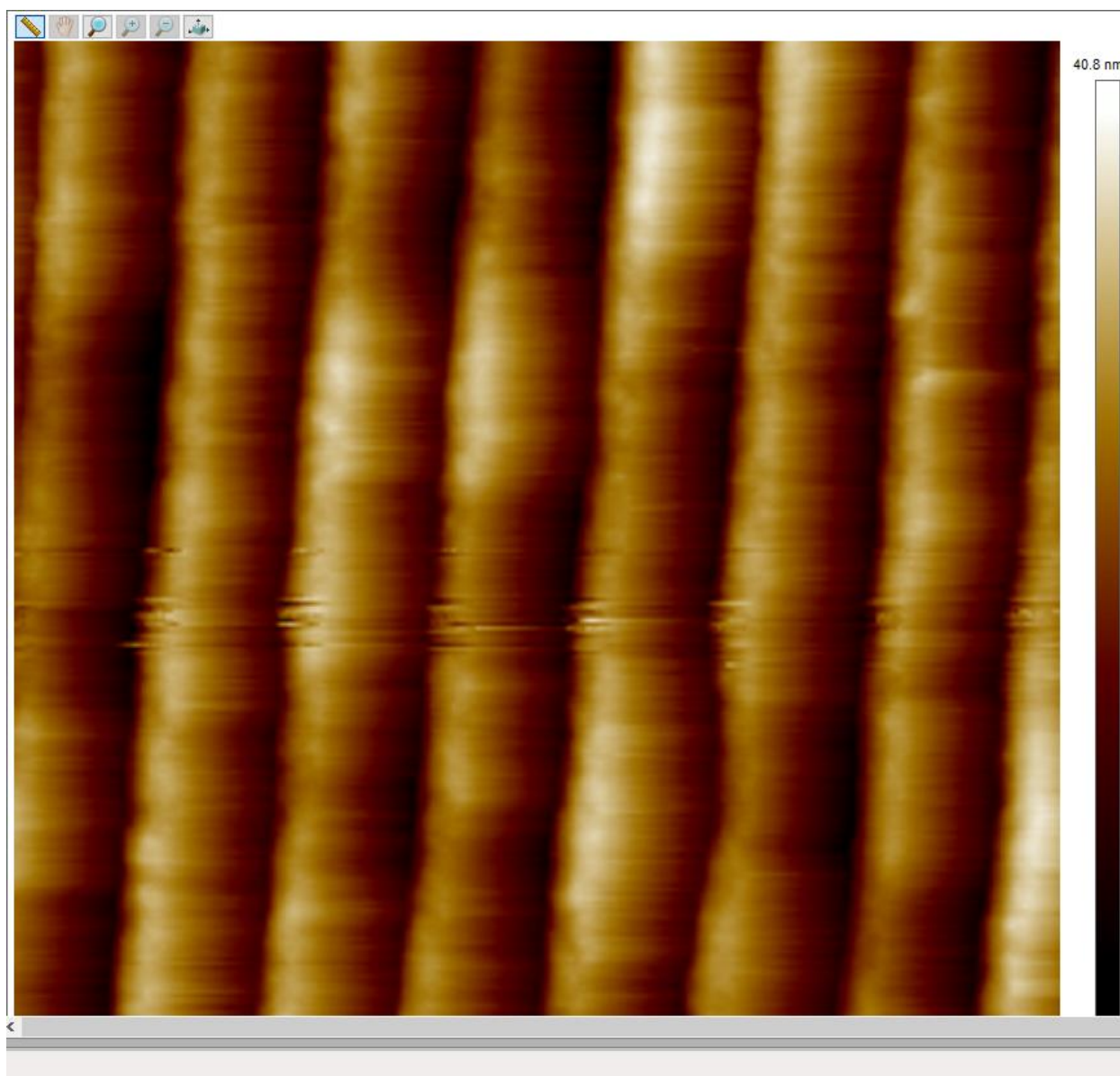


Figure 26: Vertikalni 2 400 nm

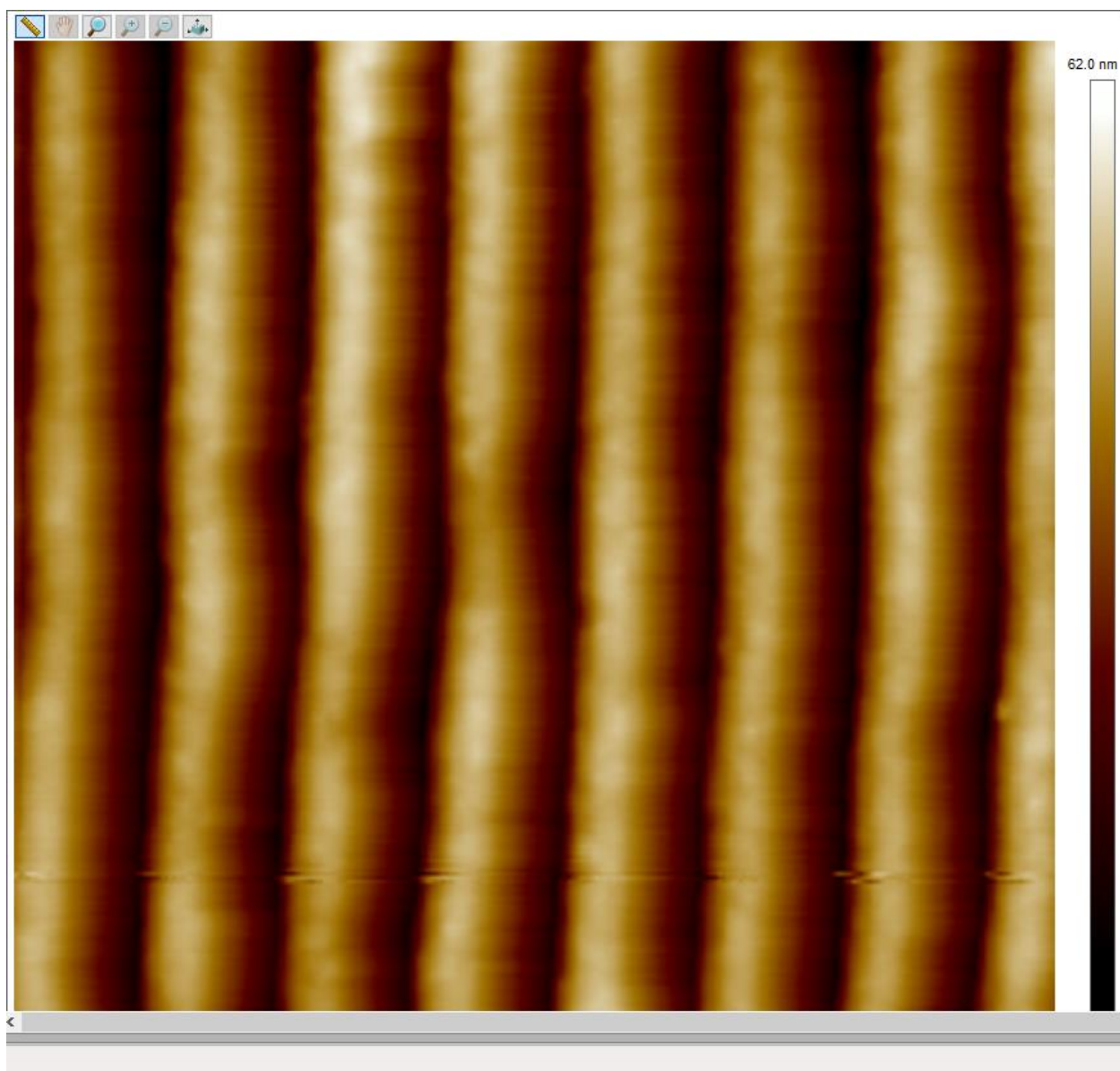


Figure 27: Vertikalni 4 400 nm

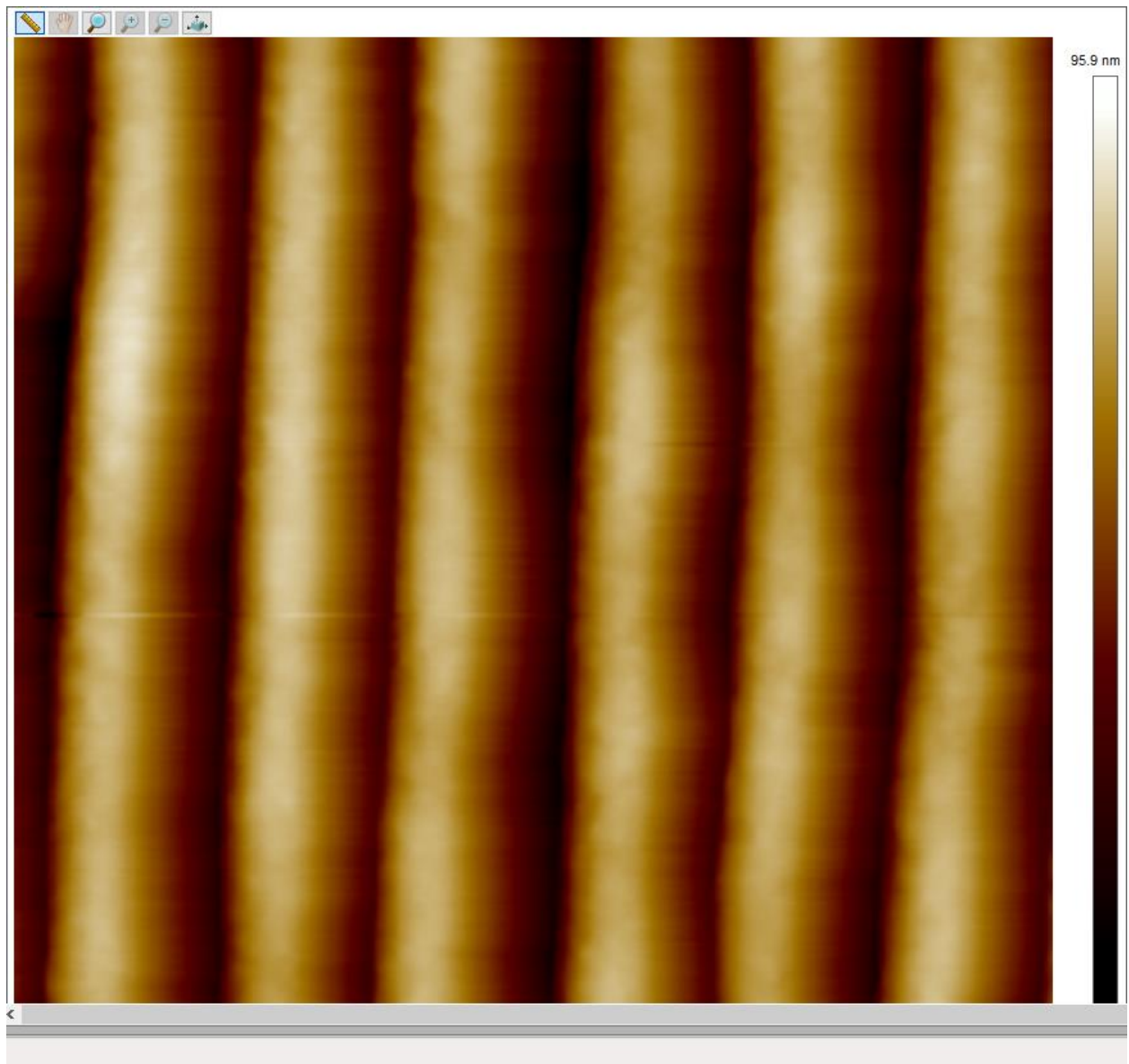


Figure 28: Vertikalni 2 500 nm

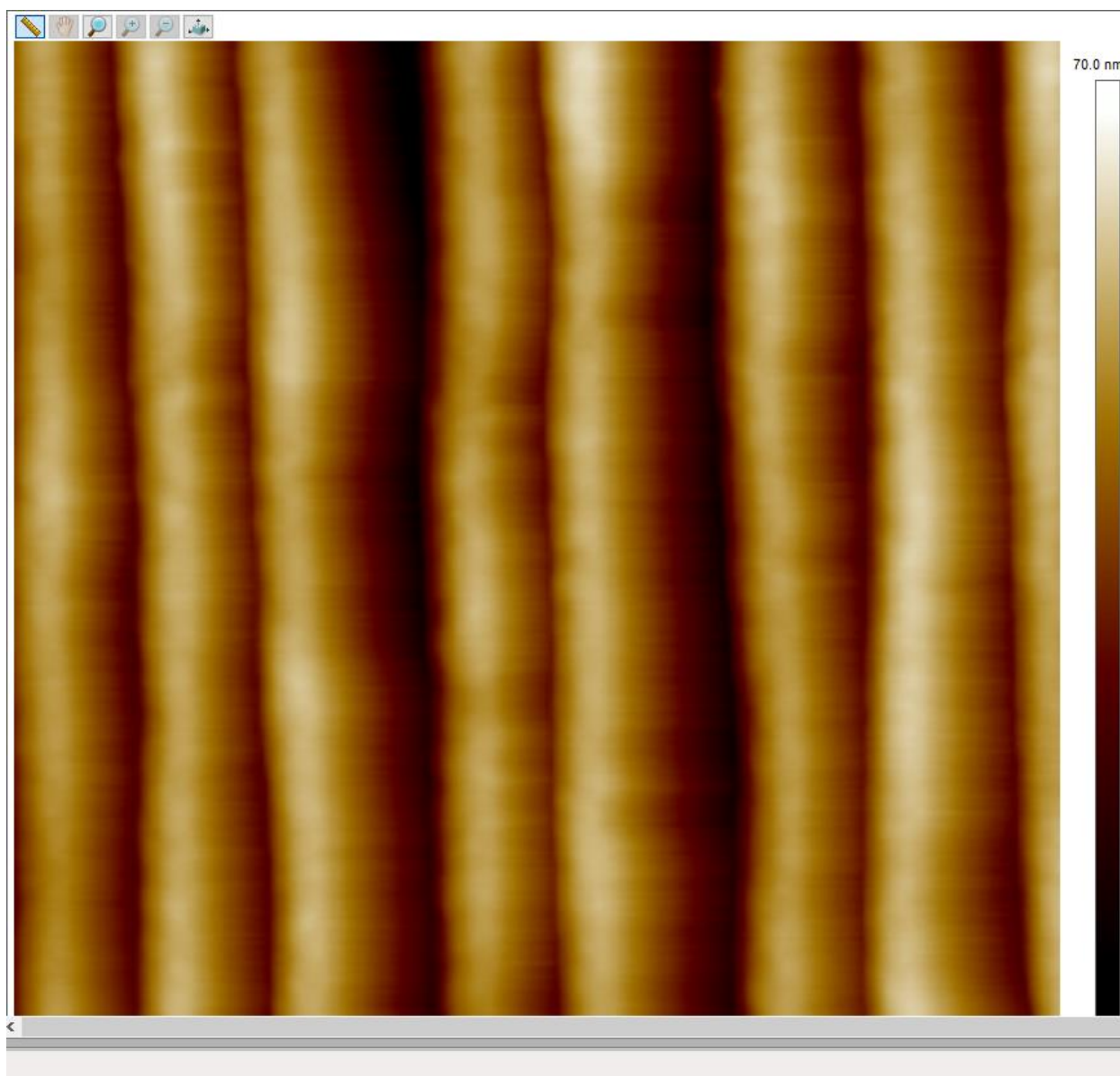


Figure 29: Vertikalni 4 500 nm

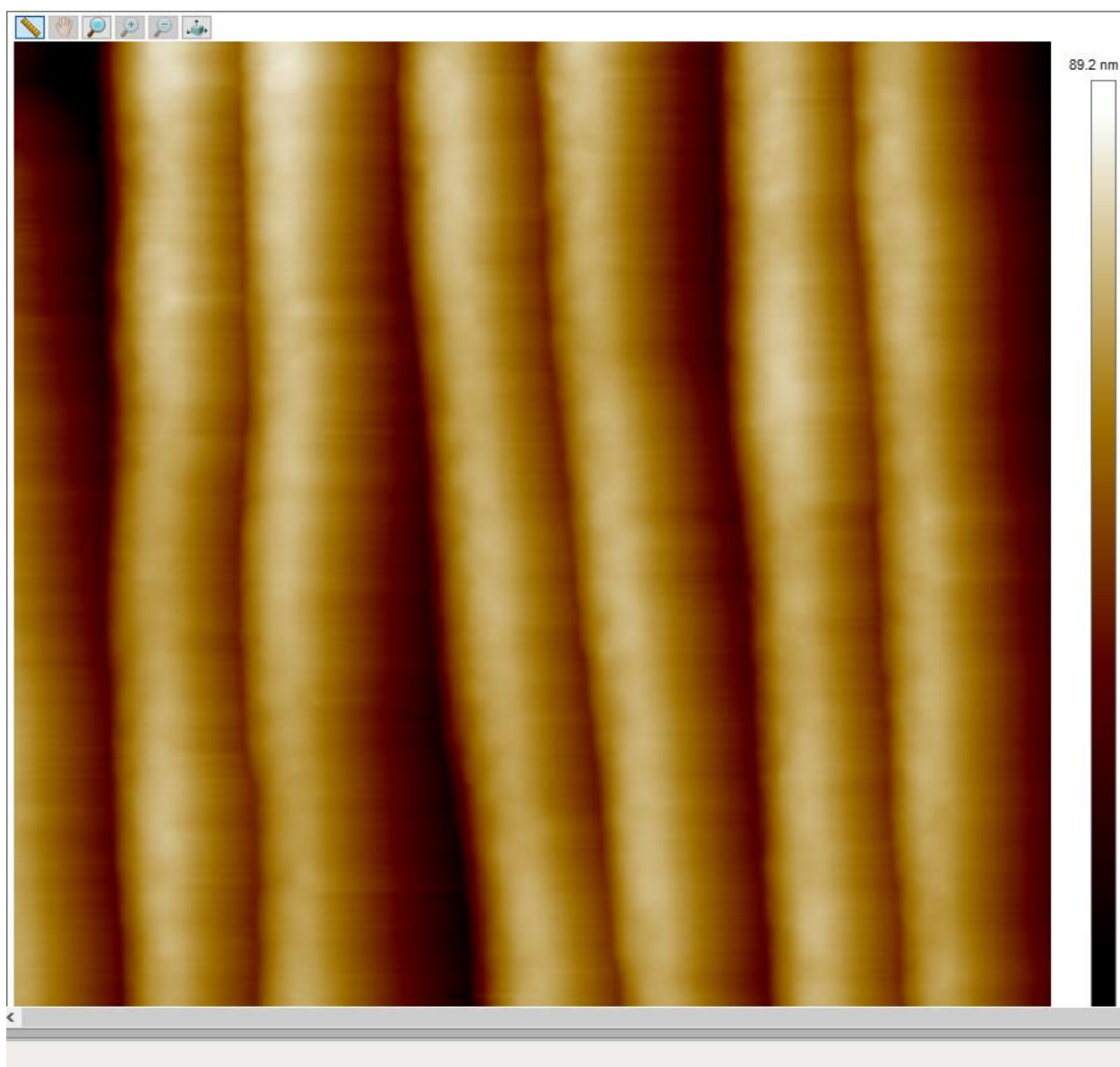


Figure 30: Vertikalni 2 600 nm

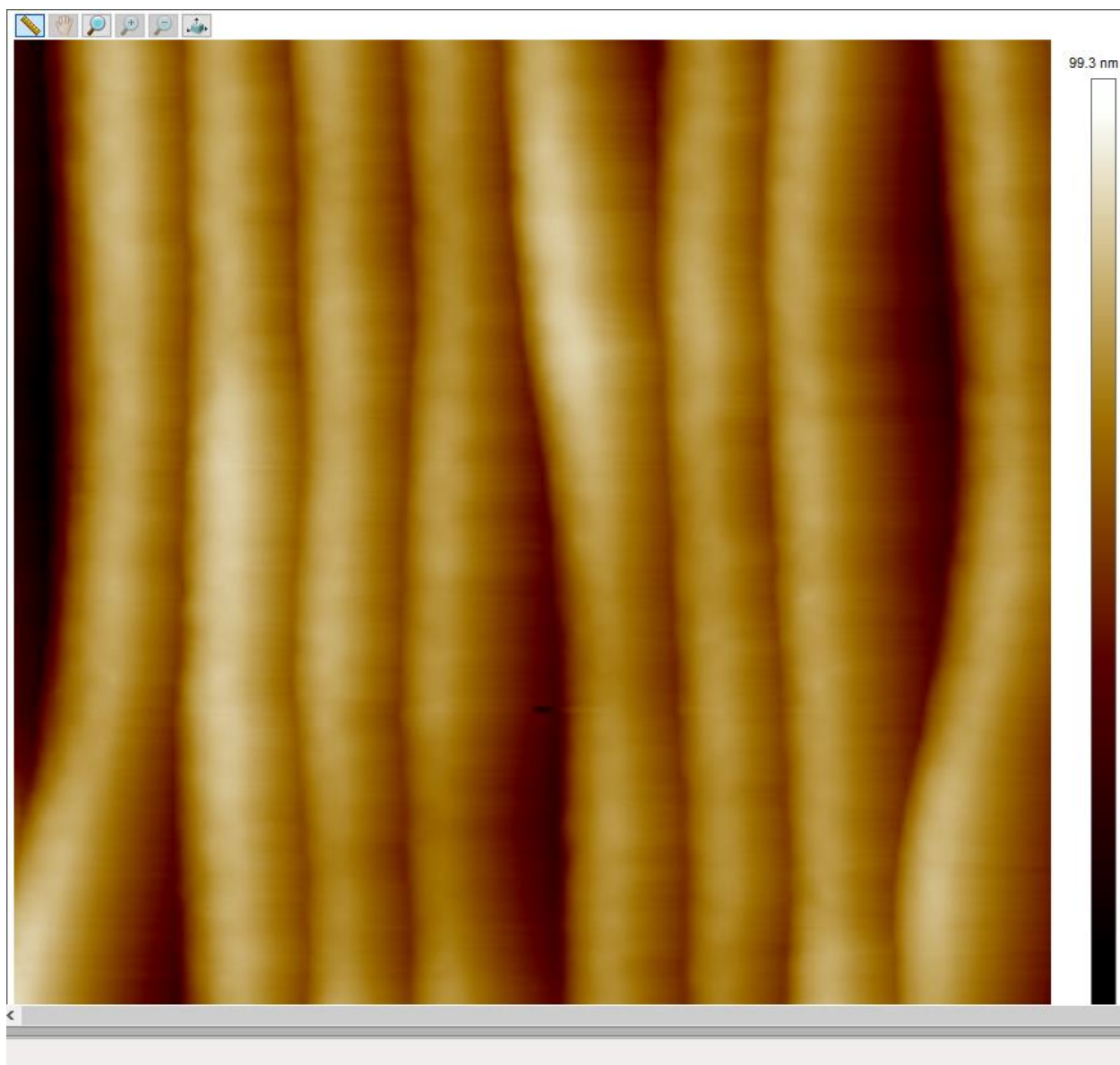


Figure 31: Vertikalni 4 600 nm

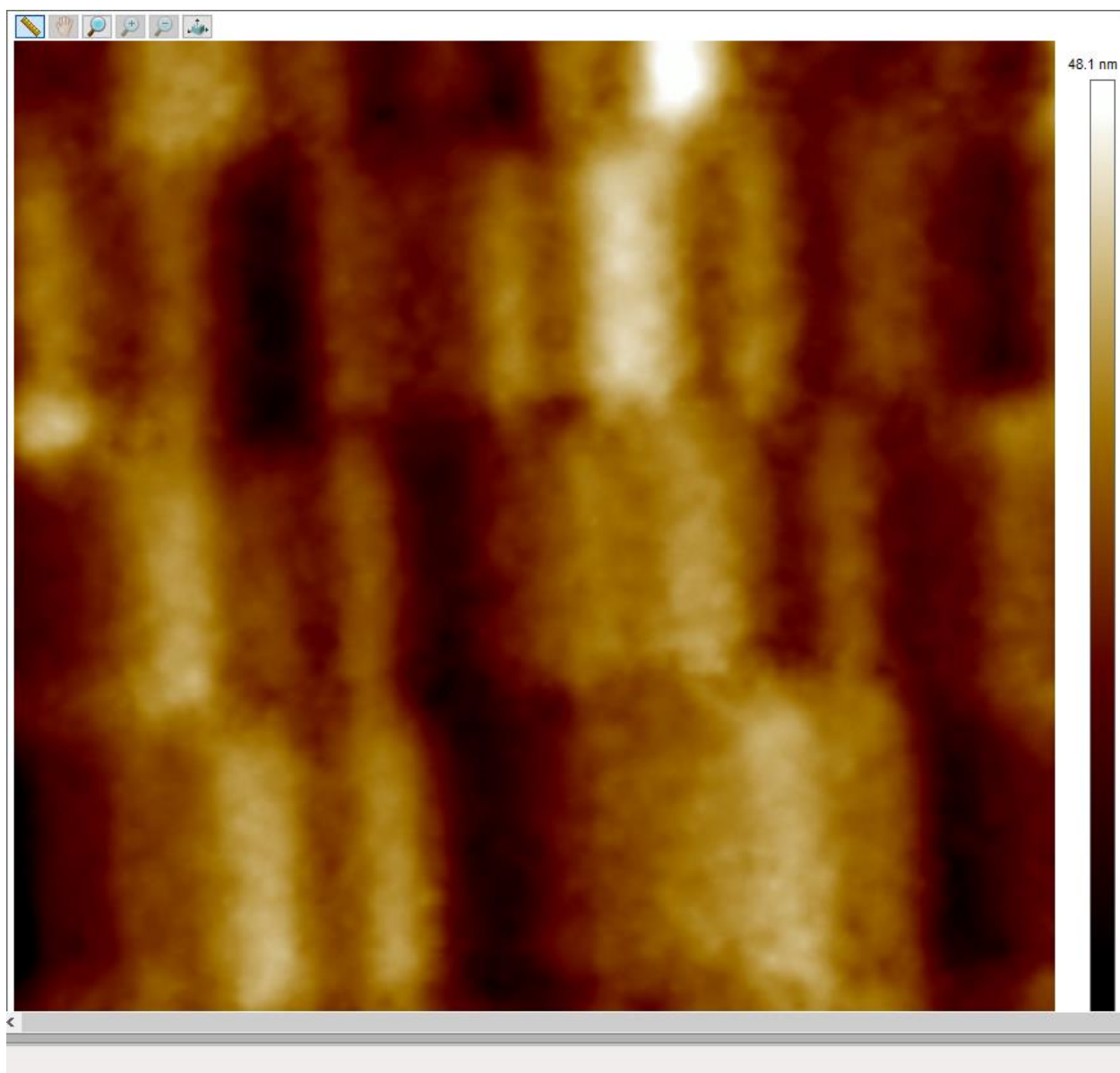


Figure 32: Vertikalni 2 700 nm