

Horizontalni in vertikalni groovi 100 - 1000 nm

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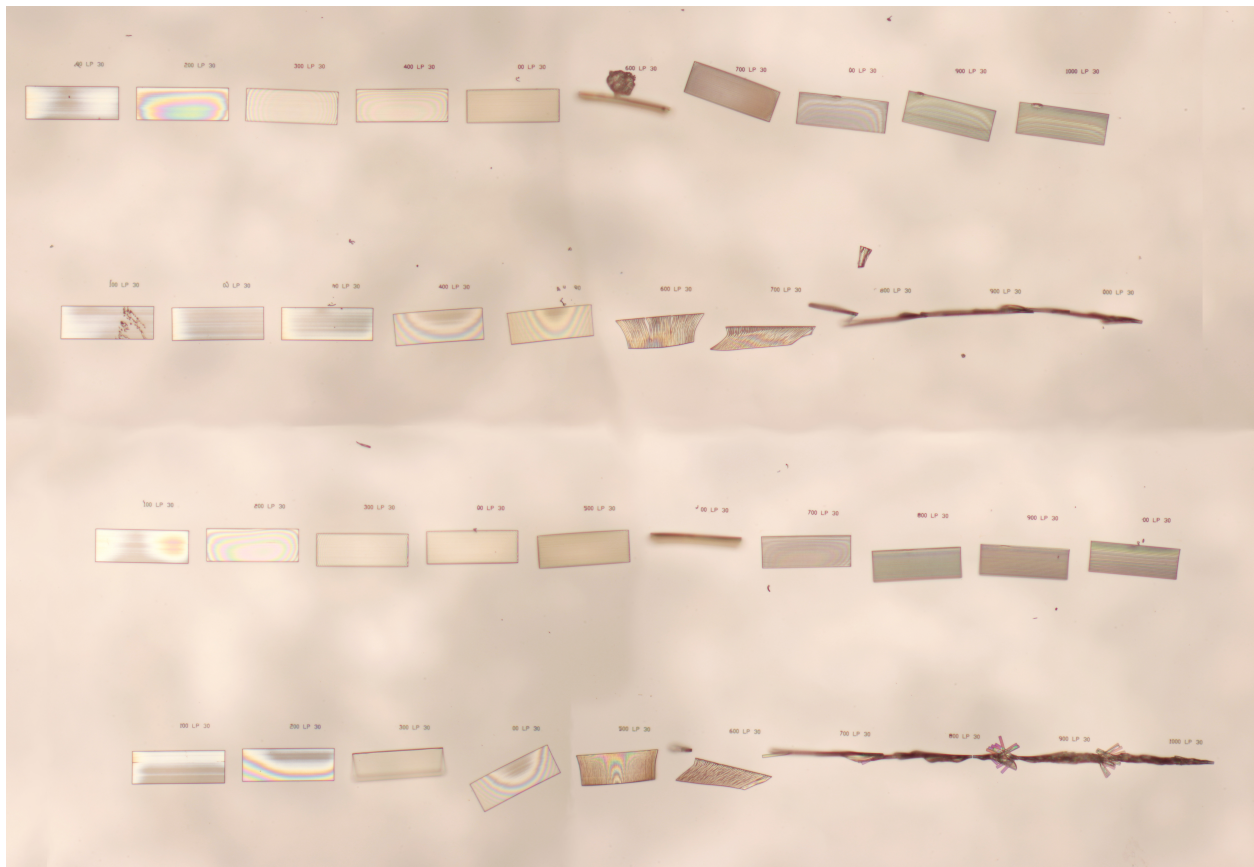


Figure 1: Vsi vzorci pod optičnim mikroskopom

Vse afm slike so zarotirane tako, da so groovi orientirani enako, kot na sliki z optičnim mikroskopom. Torej horizontalni groovi so horizontalni, vertikalni pa vertikalni.

Afm posnetki pa so bili narejeni tako, da je igla vsakič prečkala vse groove, torej je bila smer skeniranja pravokotno na groove.

Vsi posnetki so narejeni v tapping mode, 1 Hz. 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

Pri pitchu 100 in 200 nm ni videti ureditve.

Pri 300 nm in 400 nm je možno videti ureditev v horizontalni smeri, vendar brez določljive periode. Vrstice se verjetno med seboj združujejo.

Pri 500 nm je videti ureditev horizontalni smeri, vendar ima ta periodo 2x večjo kot bi pričakovali. Morda je to posledica združevanja dveh sosednjih vrstic.

Vzorec s pitchem 600 nm je v obeh primerih uničen (naključje?).

Pri 700 - 1000 nm so groovi zelo dobro vidni.

1. vrstica:

vrstica [nm]	so groovi	pitch [nm]	globina [nm]
100	morda	1500?	/
200	ne	/	/
300	ne	/	/
400	ne	/	/
500	morda	1000?	/
600	uničen	/	/
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	morda	3000?	/
400	morda	3000?	/
500	morda	1050?	/
600	uničen	/	/
700	ja	726	45
800	ja	835	60
900	ja	915	/
1000	ja	980	100

2. in 4. vrstica - vertikalni groovi

Pri 100 nm groovov ni.

Pri 200 - 500 nm so groovi dobro vidni.

Od 600 nm naprej so vzorci bolj ali manj deformirani. Tudi na nekaterih deformiranih vzorcih je možno videti groove.

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	delno uničen	454	100
700	uničen	/	/
800	uničen	/	/
900	uničen	/	/
1000	uničen	/	/

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	delno uničen	413	100
600	delno uničen	350	80
700	uničen	/	/
800	uničen	/	/
900	uničen	/	/
1000	uničen	/	/

Zaključek

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

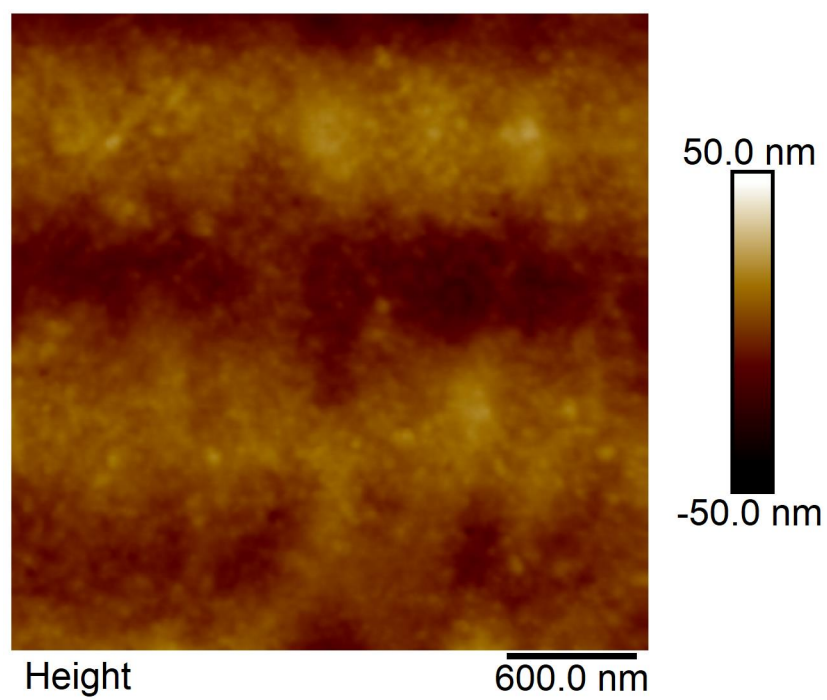


Figure 2: Horizontalni 1 100 nm

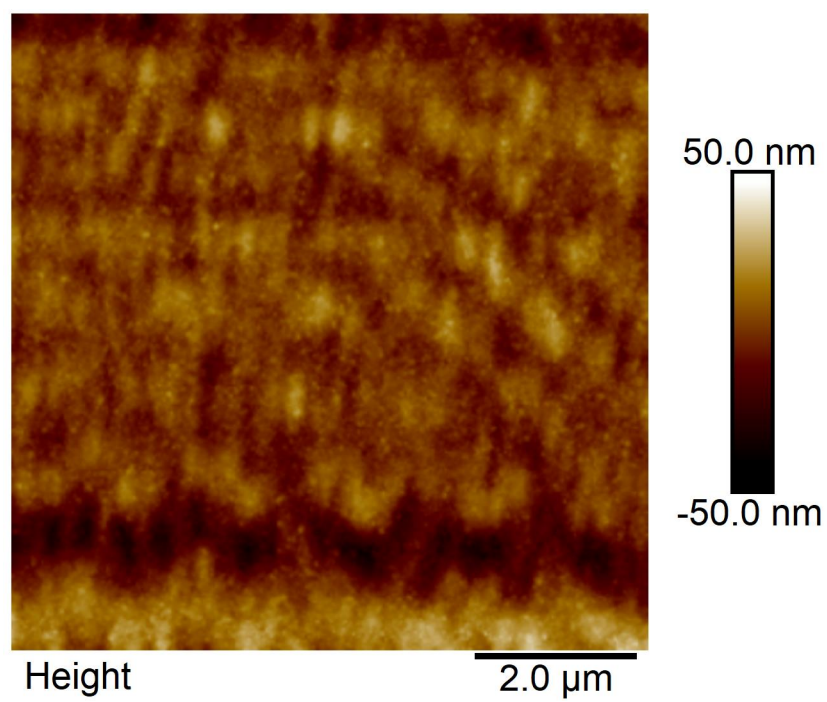


Figure 3: Horizontalni 3 100 nm

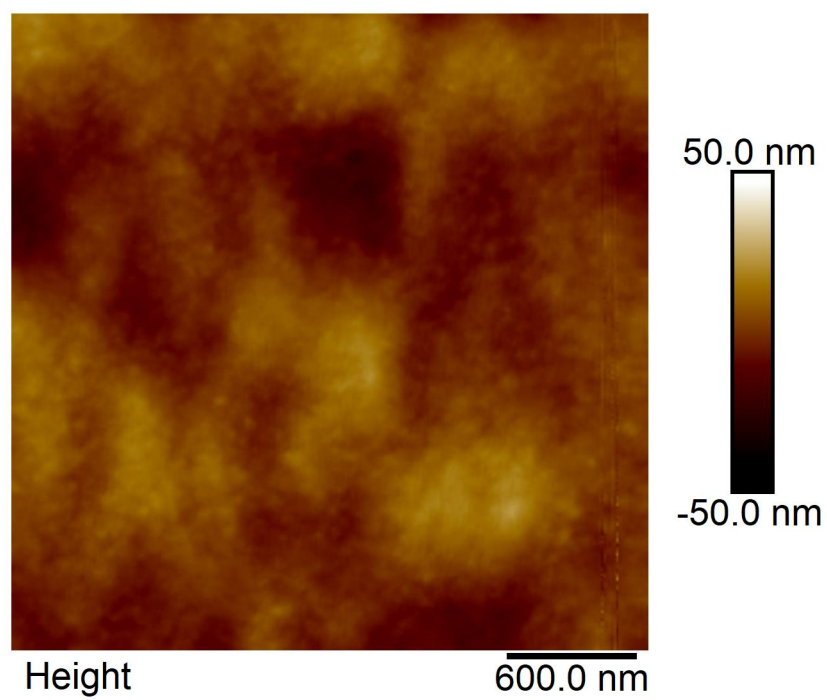


Figure 4: Horizontalni 1 200 nm

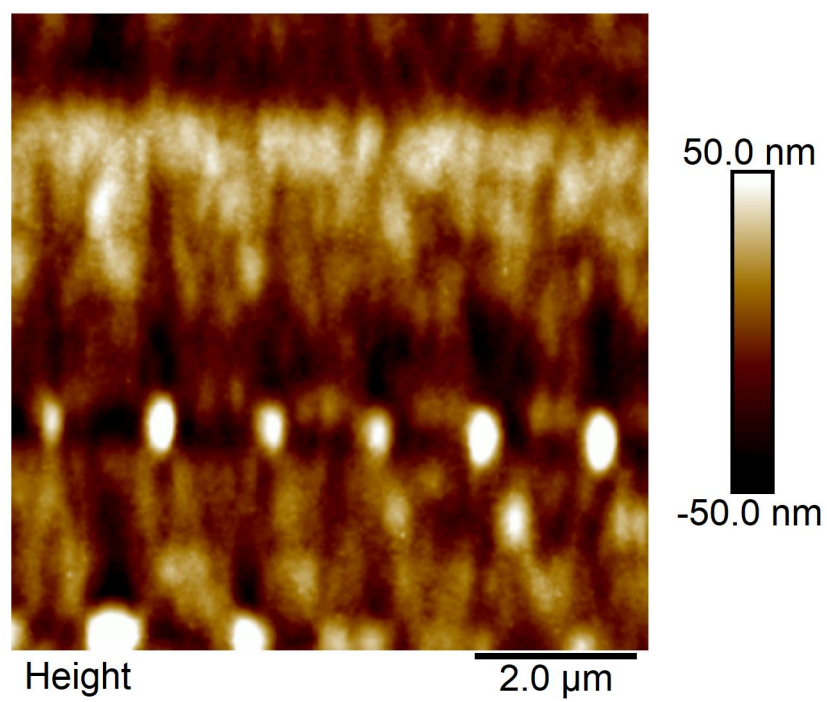


Figure 5: Horizontalni 3 200 nm

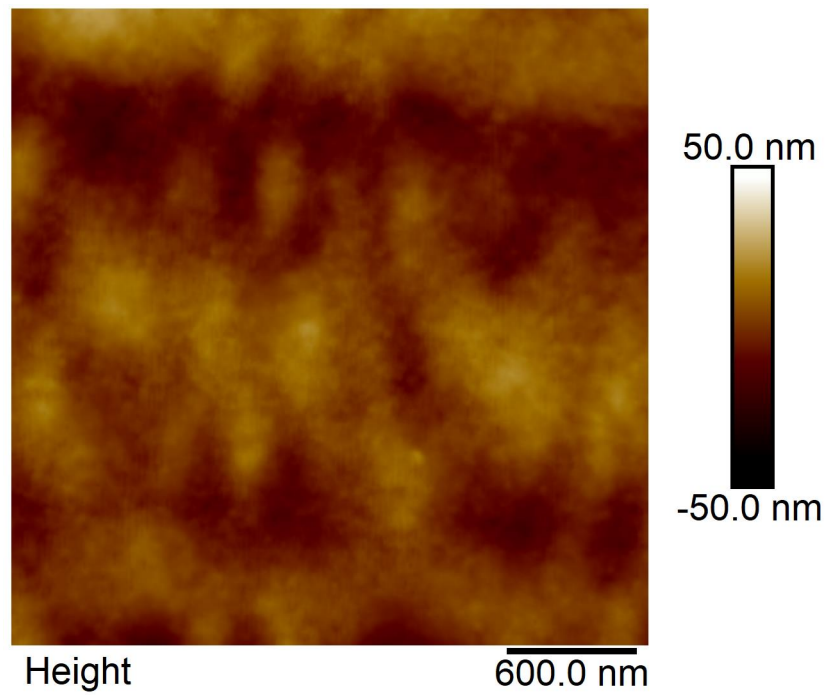


Figure 6: Horizontalni 1 300 nm

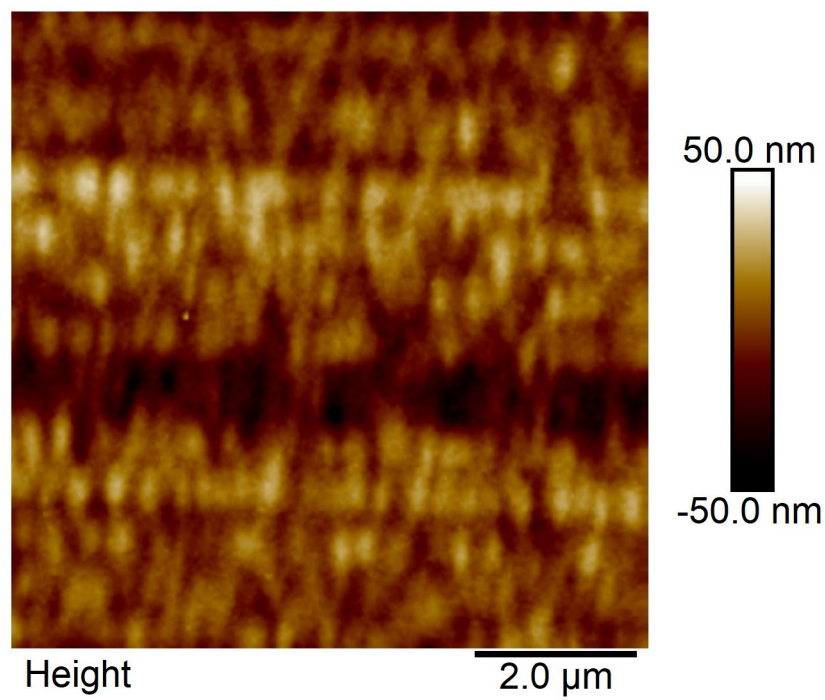


Figure 7: Horizontalni 3 300 nm

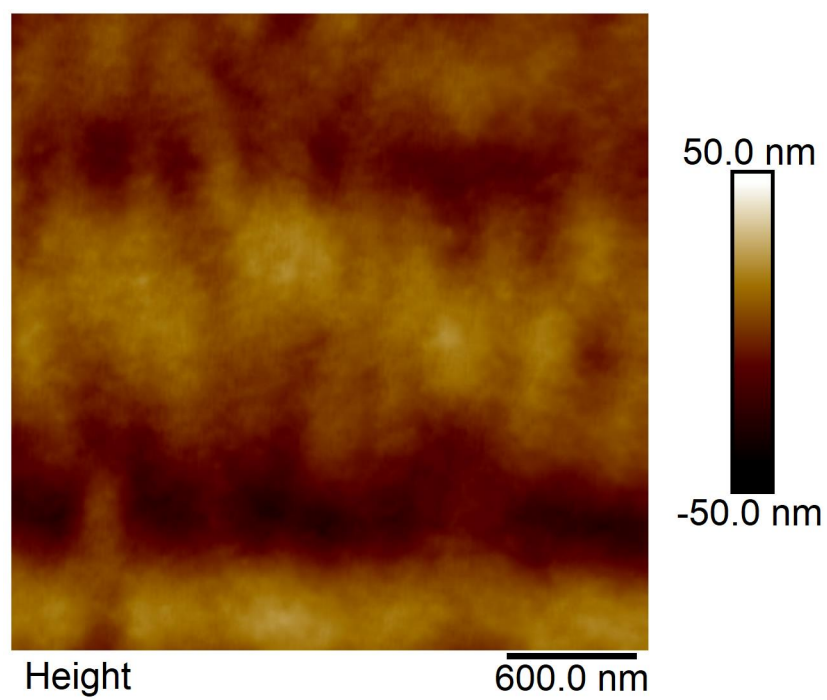


Figure 8: Horizontalni 1 400 nm

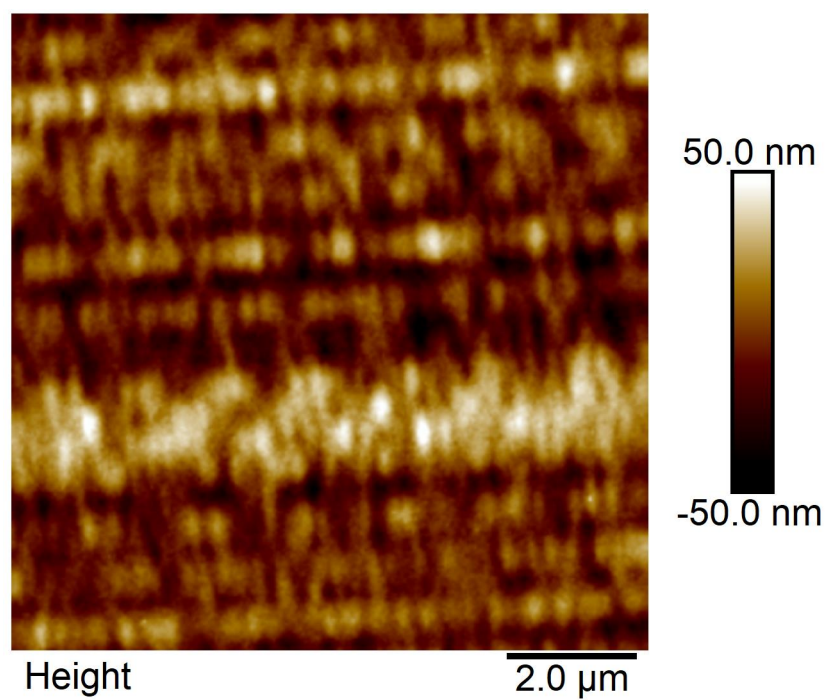


Figure 9: Horizontalni 3 400 nm

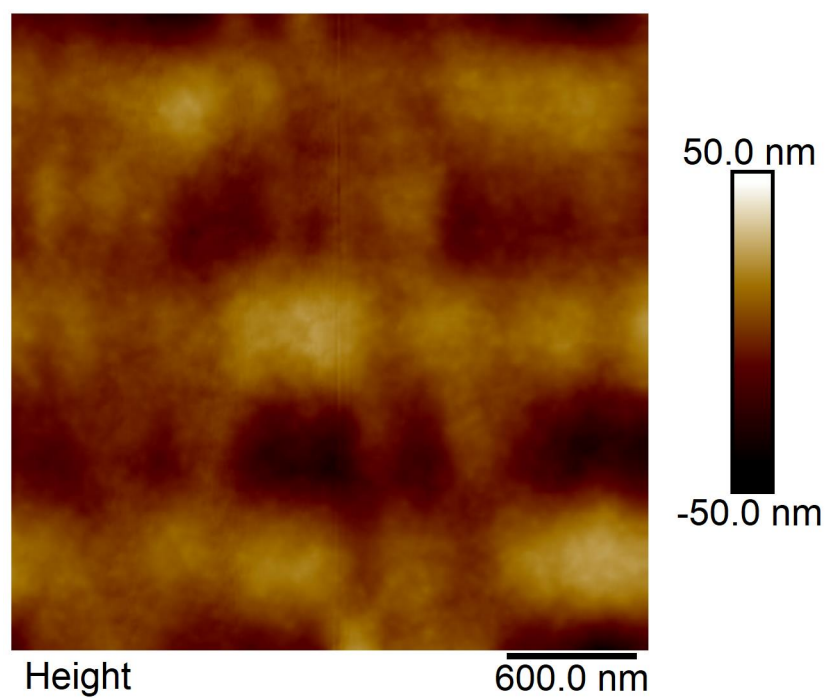


Figure 10: Horizontalni 1 500 nm

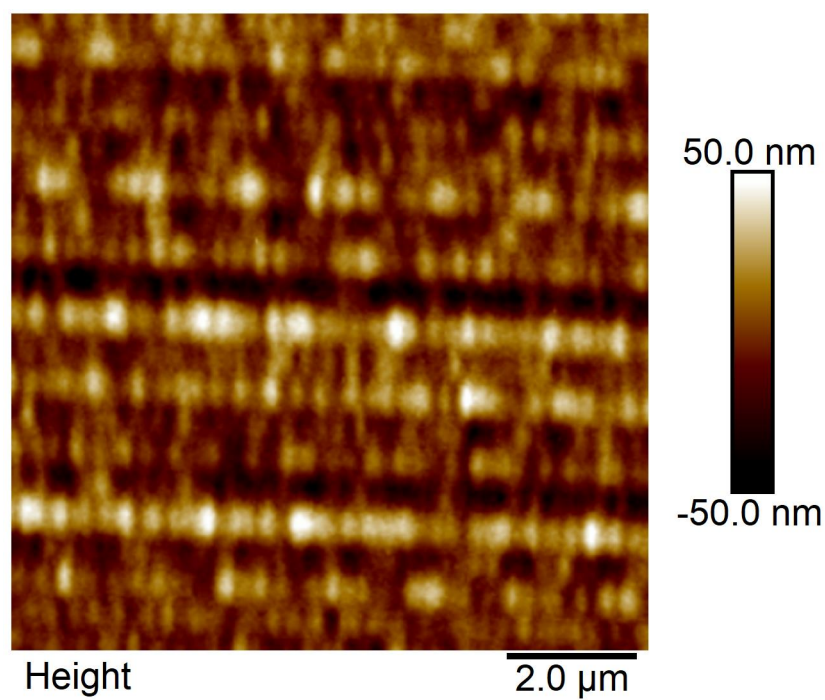


Figure 11: Horizontalni 3 500 nm

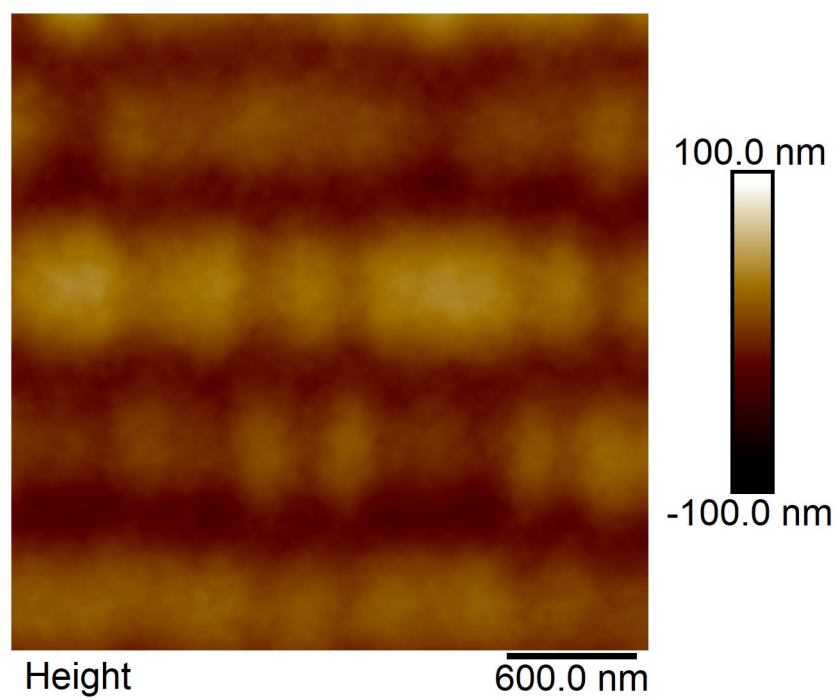


Figure 12: Horizontalni 1 700 nm

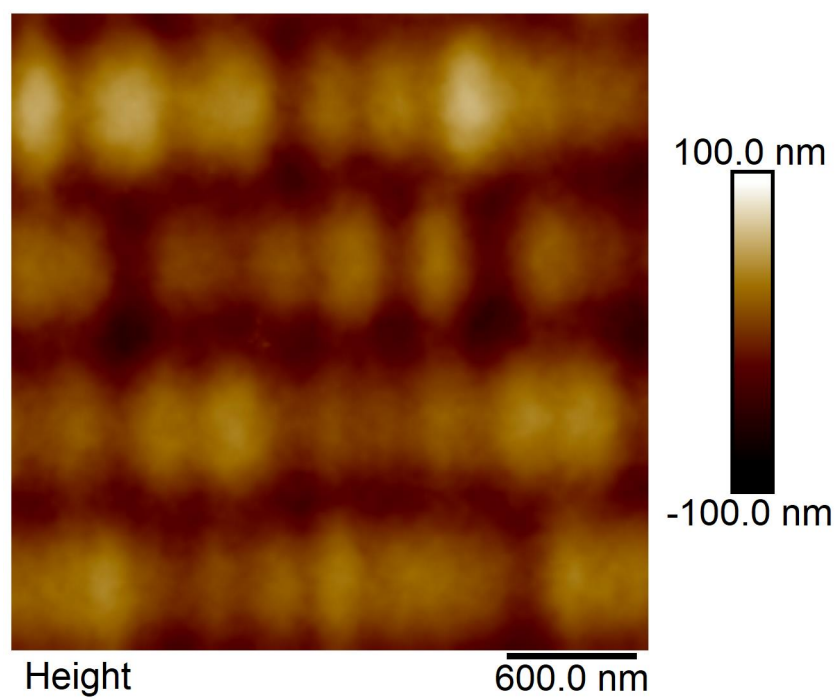


Figure 13: Horizontalni 3 700 nm

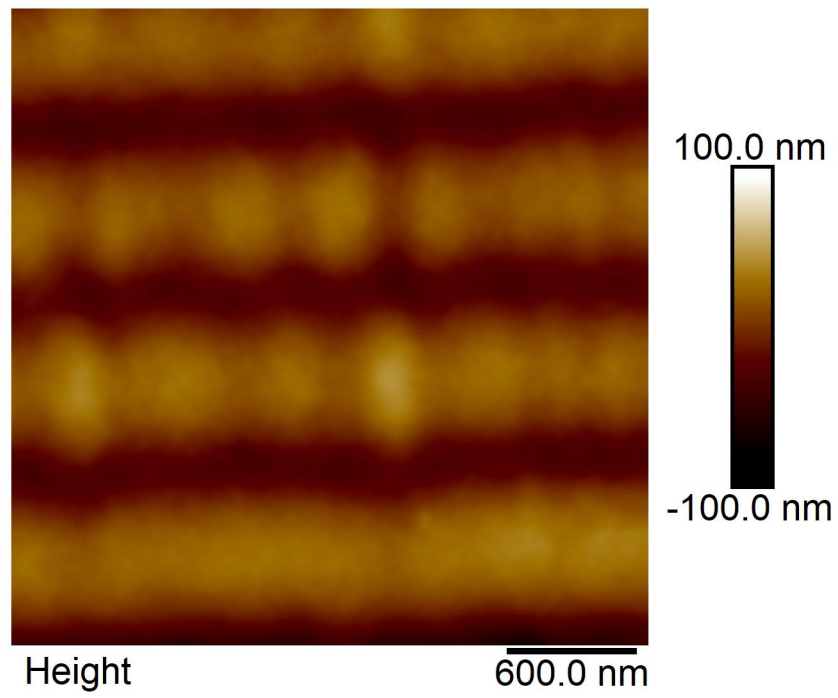


Figure 14: Horizontalni 1 800 nm

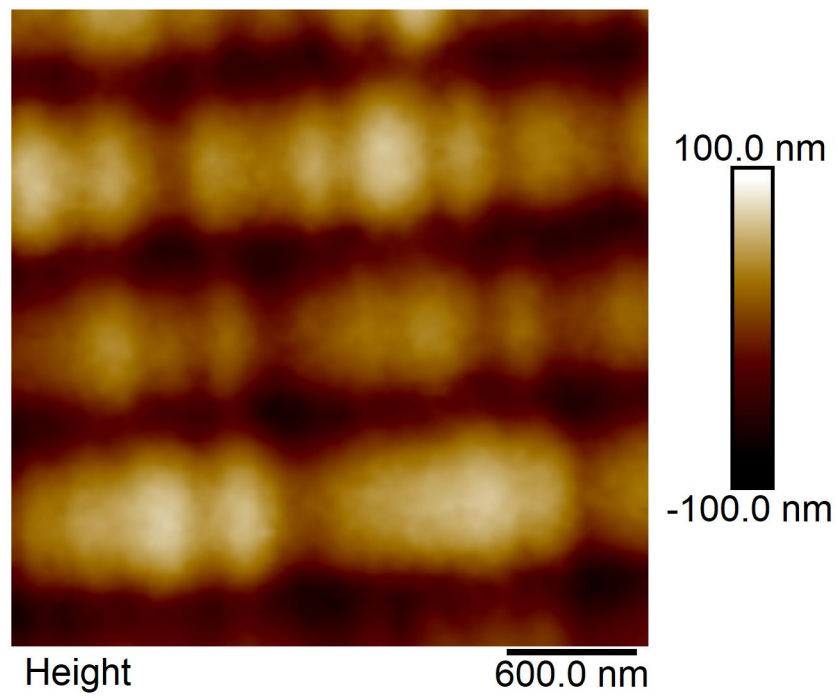


Figure 15: Horizontalni 3 800 nm

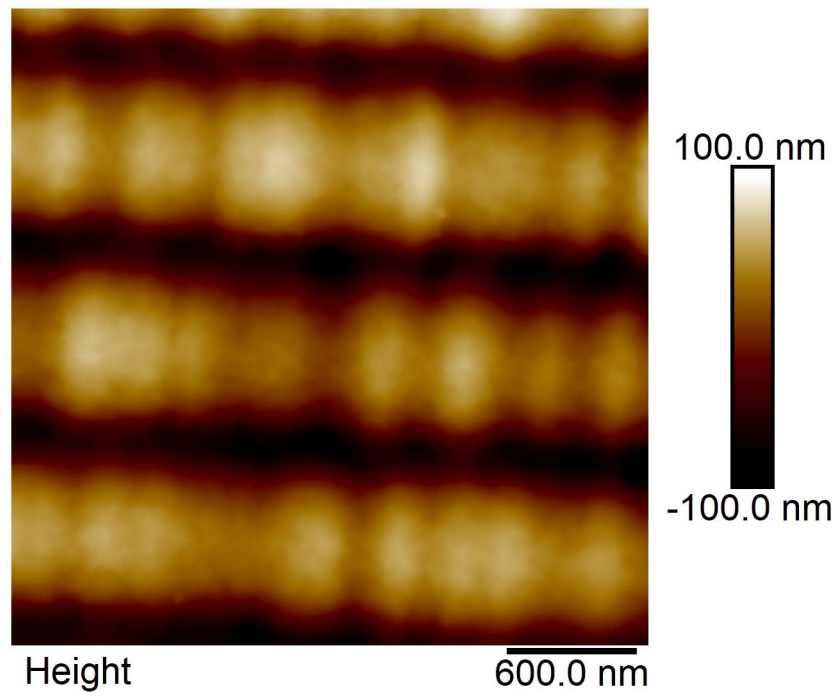


Figure 16: Horizontalni 3 900 nm

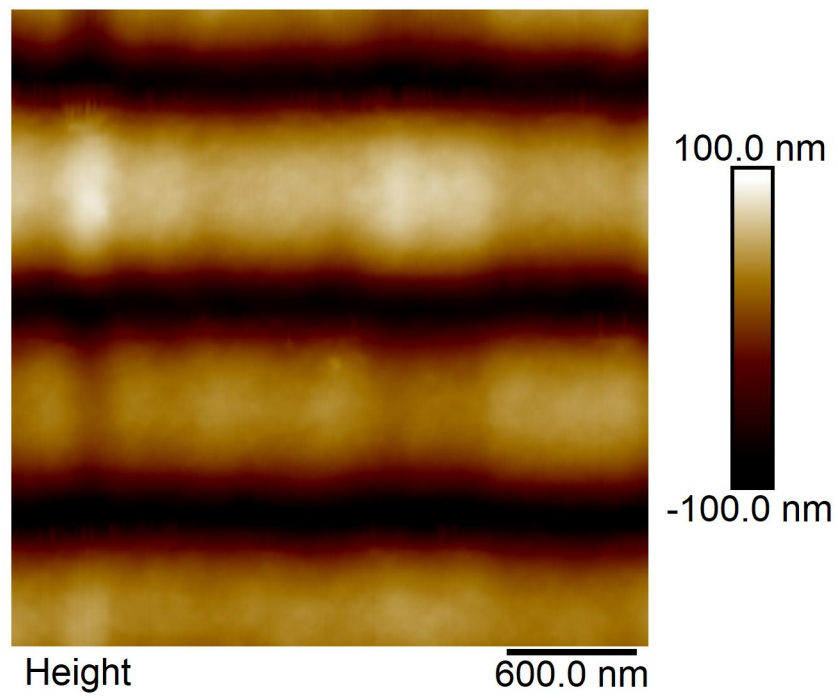


Figure 17: Horizontalni 1 1000 nm

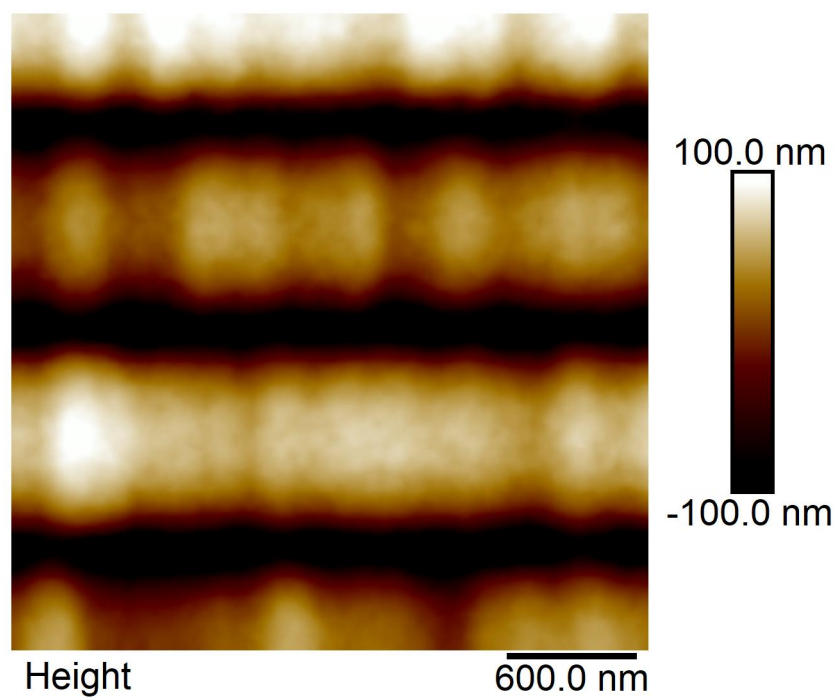


Figure 18: Horizontalni 3 1000 nm

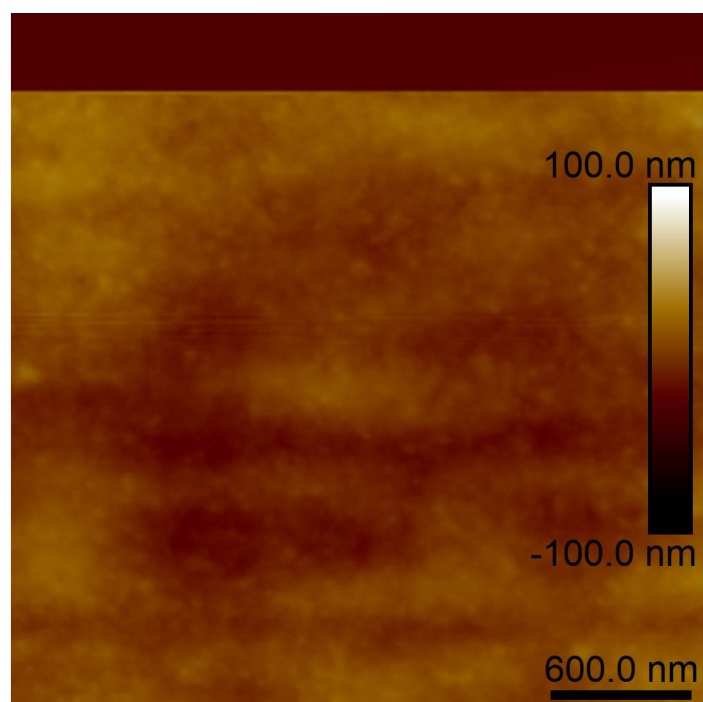


Figure 19: Vertikalni 2 100 nm

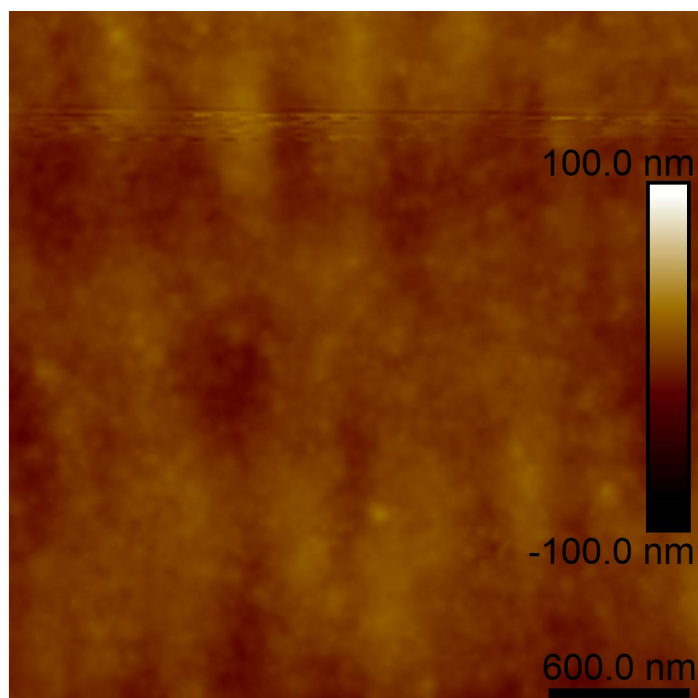


Figure 20: Vertikalni 4 100 nm

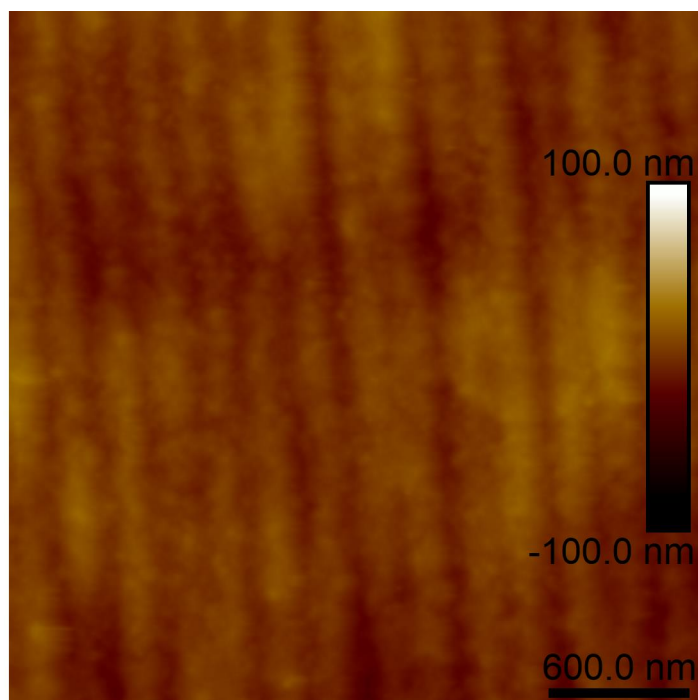


Figure 21: Vertikalni 2 200 nm

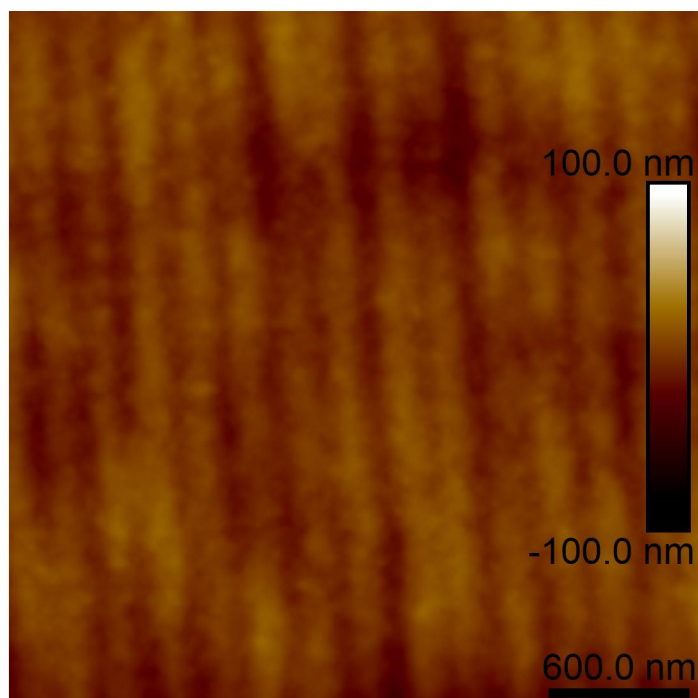


Figure 22: Vertikalni 4 200 nm

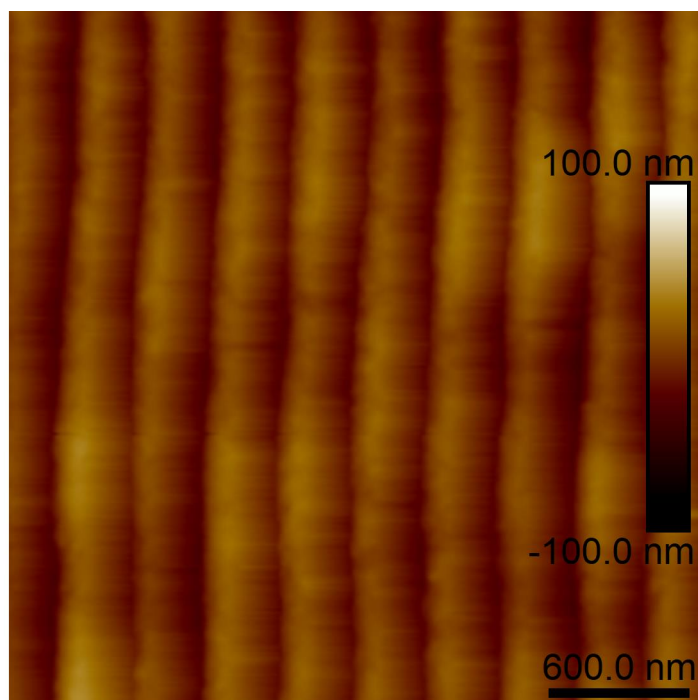


Figure 23: Vertikalni 2 300 nm

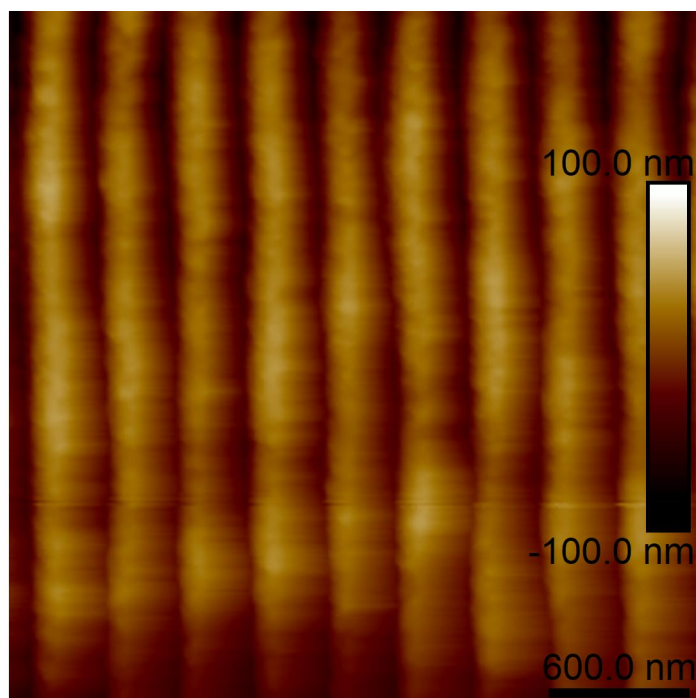


Figure 24: Vertikalni 4 300 nm

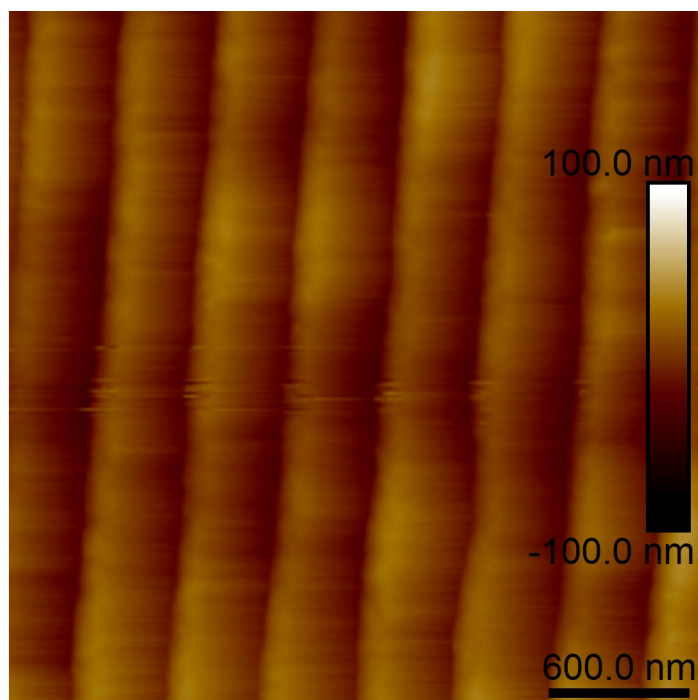


Figure 25: Vertikalni 2 400 nm

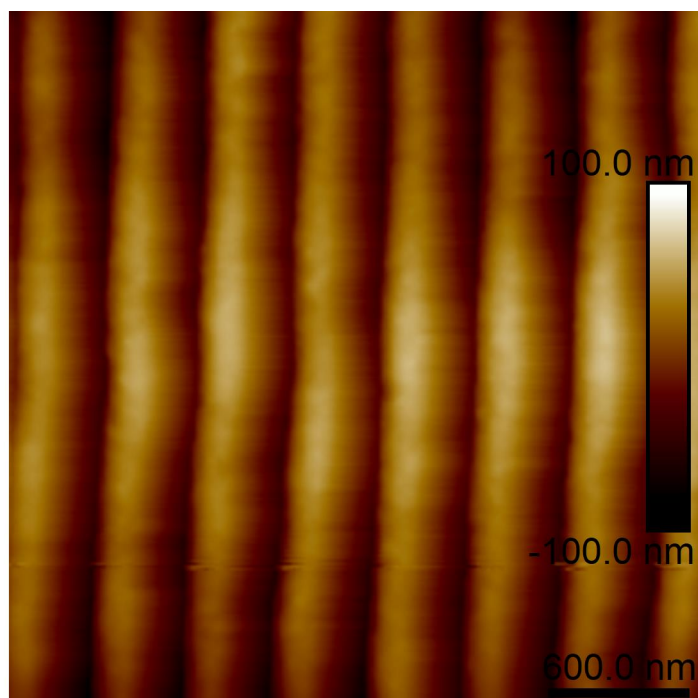


Figure 26: Vertikalni 4 400 nm

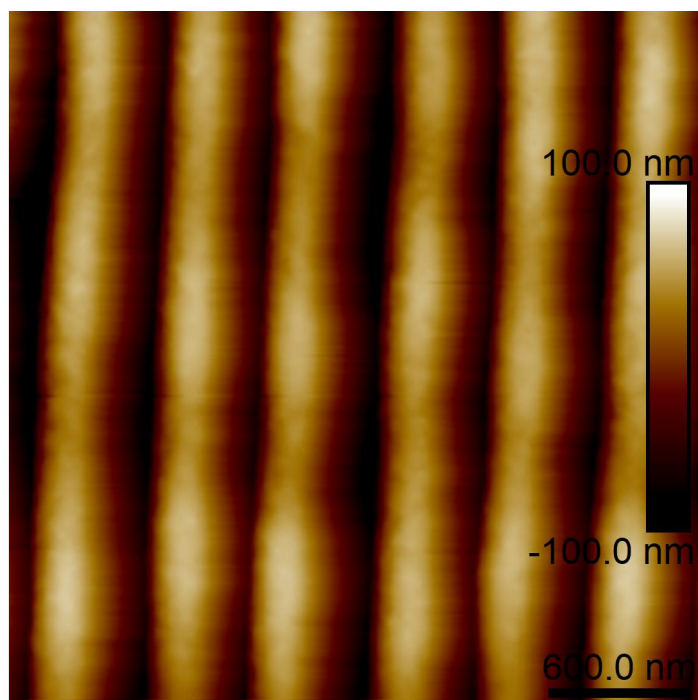


Figure 27: Vertikalni 2 500 nm

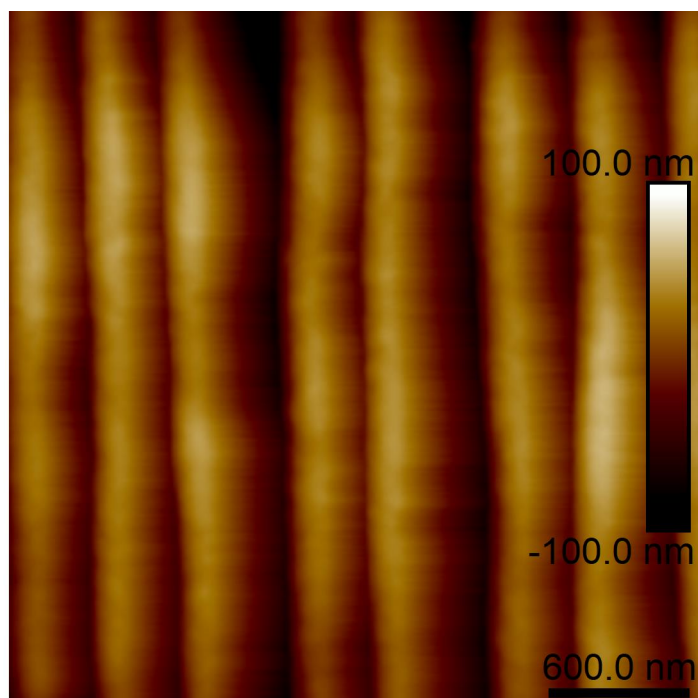


Figure 28: Vertikalni 4 500 nm

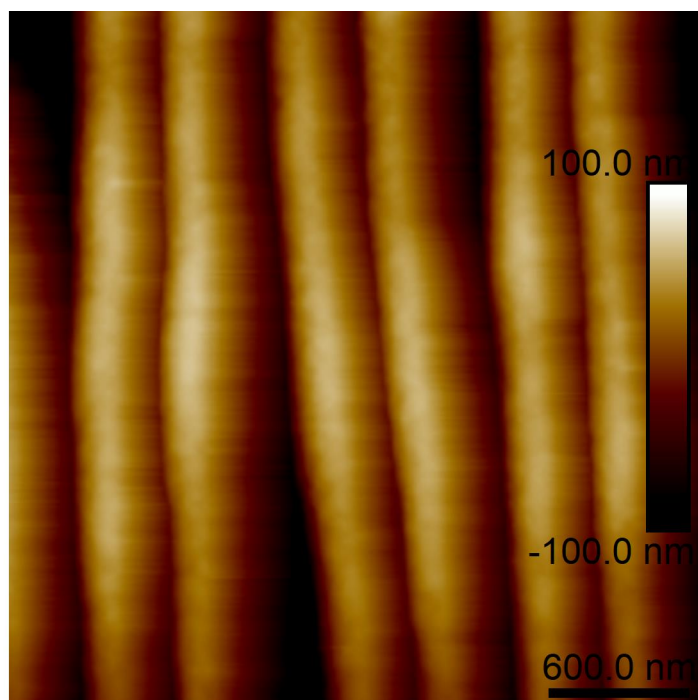


Figure 29: Vertikalni 2 600 nm

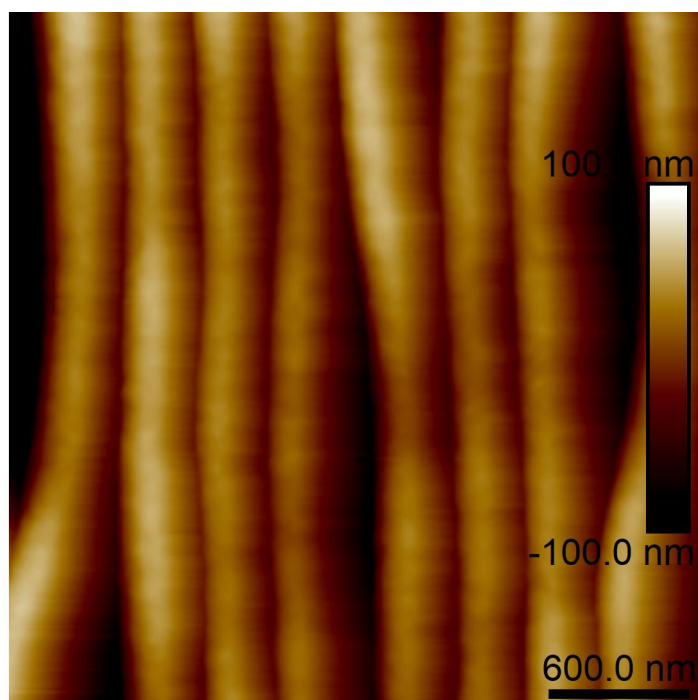


Figure 30: Vertikalni 4 600 nm