Filip Krzyżewski @ Sofia University, Bulgaria

During my Erasmus+ mobility to Sofia University from 9 to 15 September 2018 I participated in finalizing the manuscript entitled *Scaling and dynamic stability of model vicinal surfaces* that we prepared together with the Bulgarian colleagues. At the end of the mobility, the work was submitted to the *Crystal Growth & Design* journal and recently was accepted for publication. This collaborative work enhanced my skills and effectiveness in disseminating the results of my scientific work.

The manuscript concerns study of 1D numerical model of vicinal crystal surface. We studied its stability against step bunching (SB). At first we found time scaling prefactors and exponents allowing to compare systems grown or sublimated under different condition at the same stages of evolution. Then we assumed some moderate, rescaled time of evolution and made dense scans of parameter space investigating its stability against step bunching. Our study resulted in stability diagrams of the investigated system in different planes of parameter space (adatom concentration c_0, diffusional bias δ, speed of diffusion n_{DS}). We have shown that SB is a general phenomenon present independently on the direction of the diffusional bias (i.e electric current applied during the growth/sublimation process) and direction of step movement (sublimation or growth). Stability diagrams of sublimated and grown system are presented in figure. Negative (positive) values of δ mean step up (down) direction of the current.

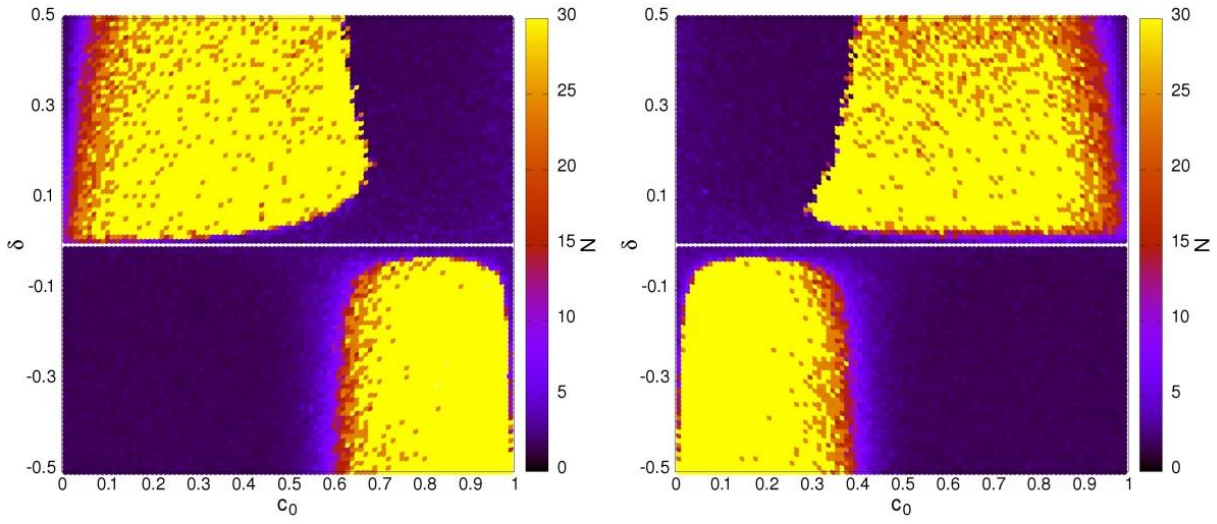

Figure. Stability diagrams of grown (left) and sublimated (right) crystal in the space of c_0- δ.