



## The effect of Mo addition on the evolution of granular bainite in low carbon Nb-containing steel strips

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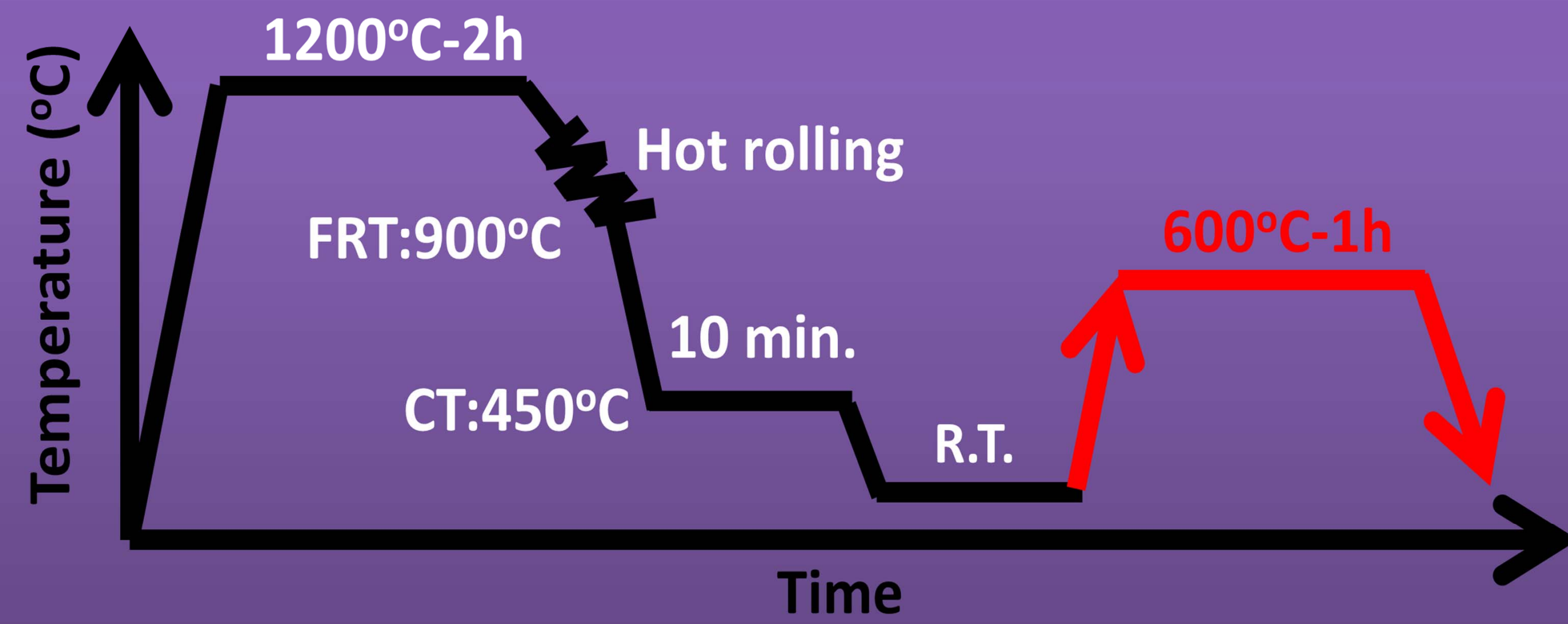
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### Abstract

The strips needed 0.3wt% Mo to raise bainite from 63 Vol% to 79Vol% with quantification in EBSD mapping. HR TEM images can be used to identify Nb or (Nb,Mo) carbides precipitated at granular bainite and estimated the carbide size. It was shown that Mo can not refined Nb carbides to promote secondary hardening effect for Nb-containing bainitic strips. It clarifies that contribution of strength by Mo is attributed to the hardenability.

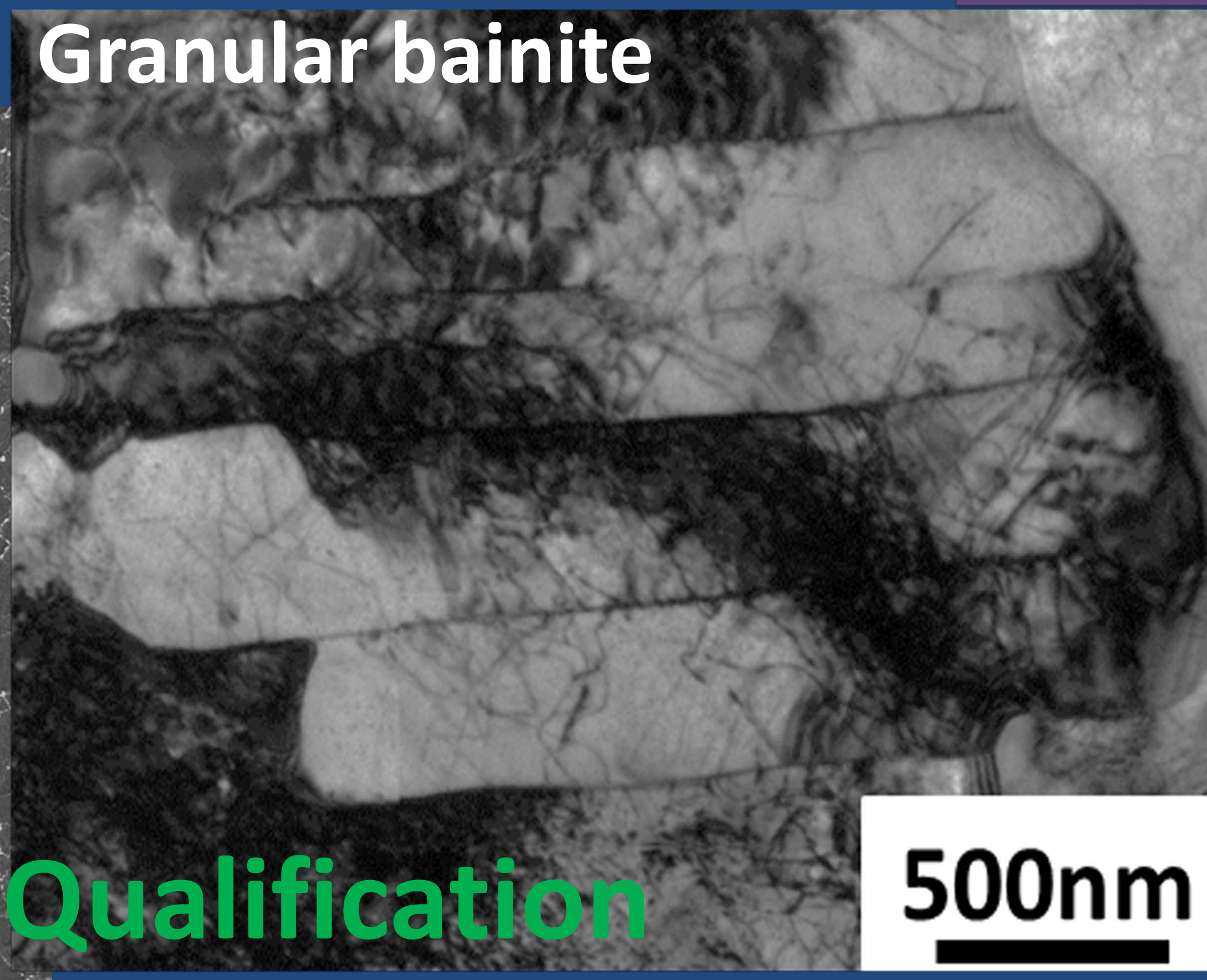
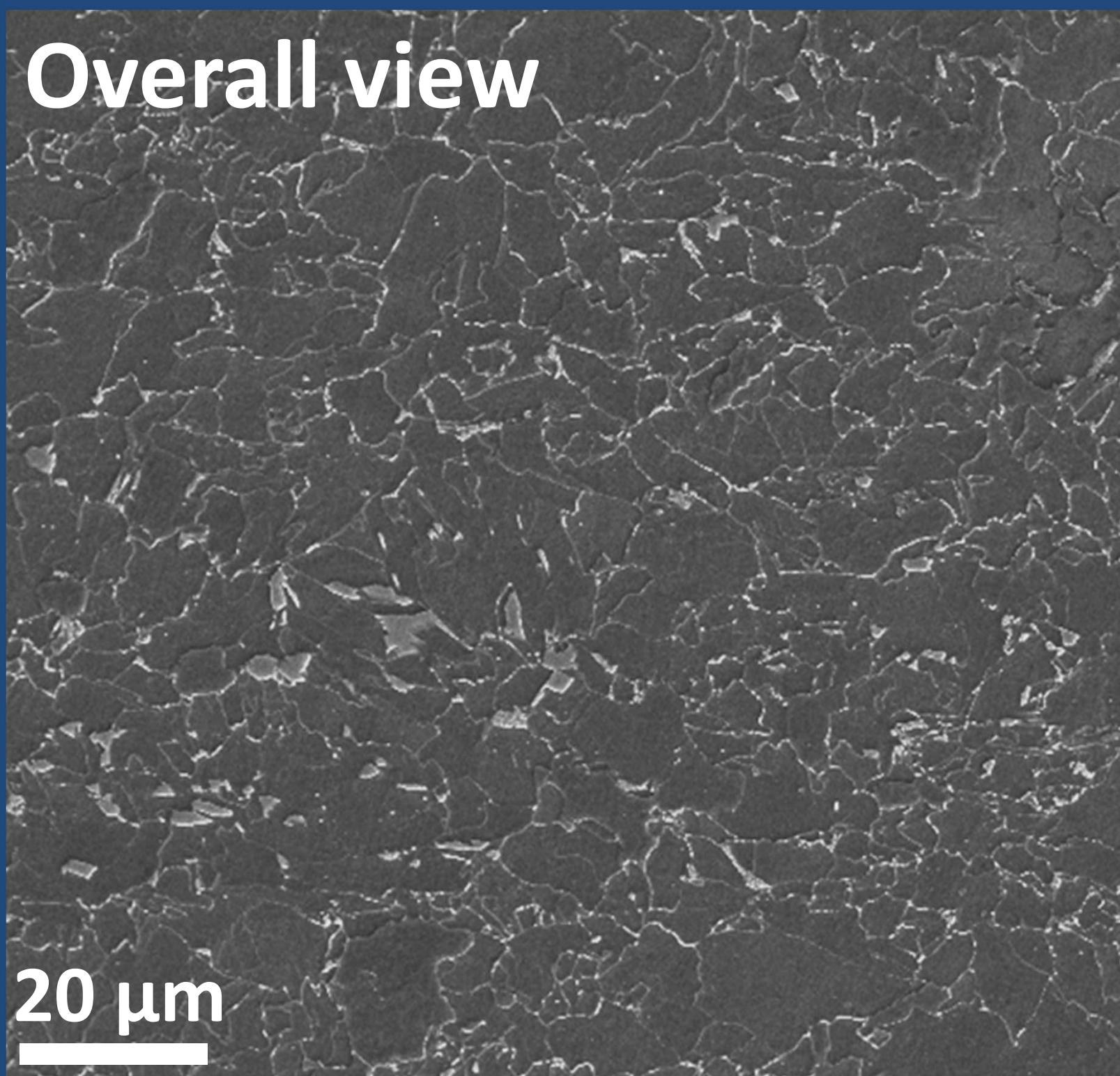
### Composition and Experiments

Strip No.	C	Si	Mn	Nb	Mo
Nb	0.05	0.2	1.7	0.08	-
Nb-Mo	0.05	0.2	1.7	0.08	0.1
Nb-3Mo	0.05	0.2	1.7	0.08	0.3

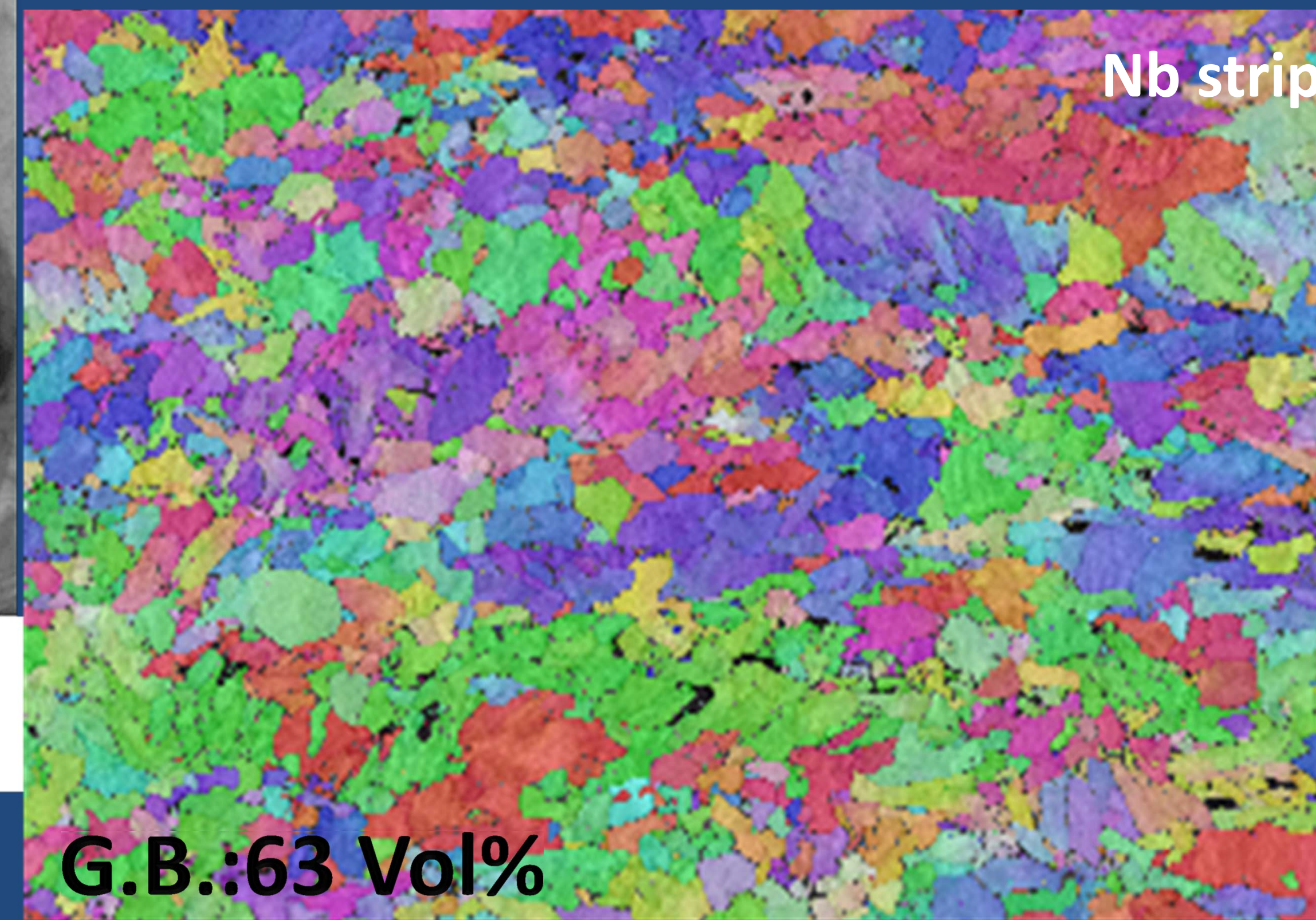


### Results & discussion

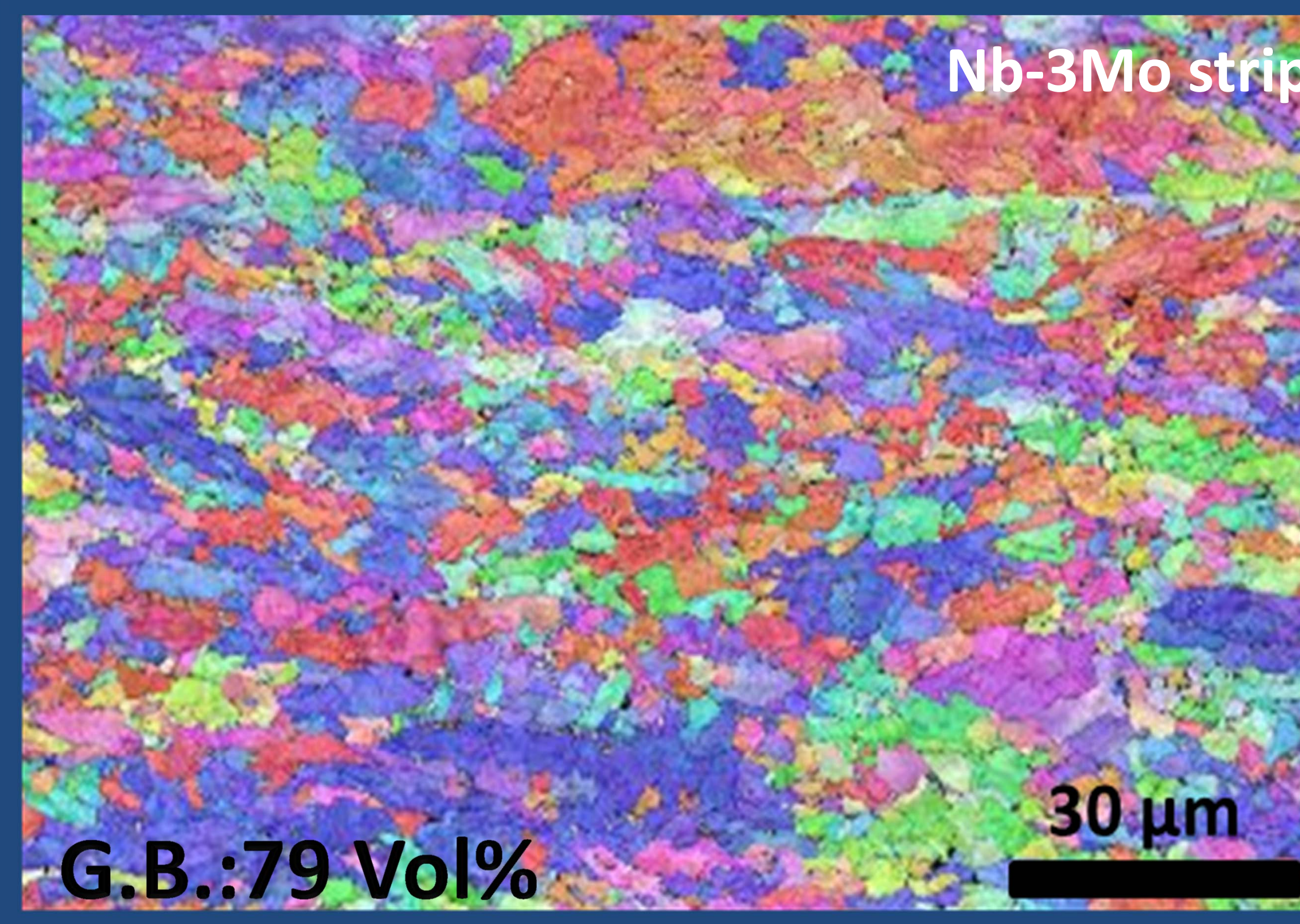
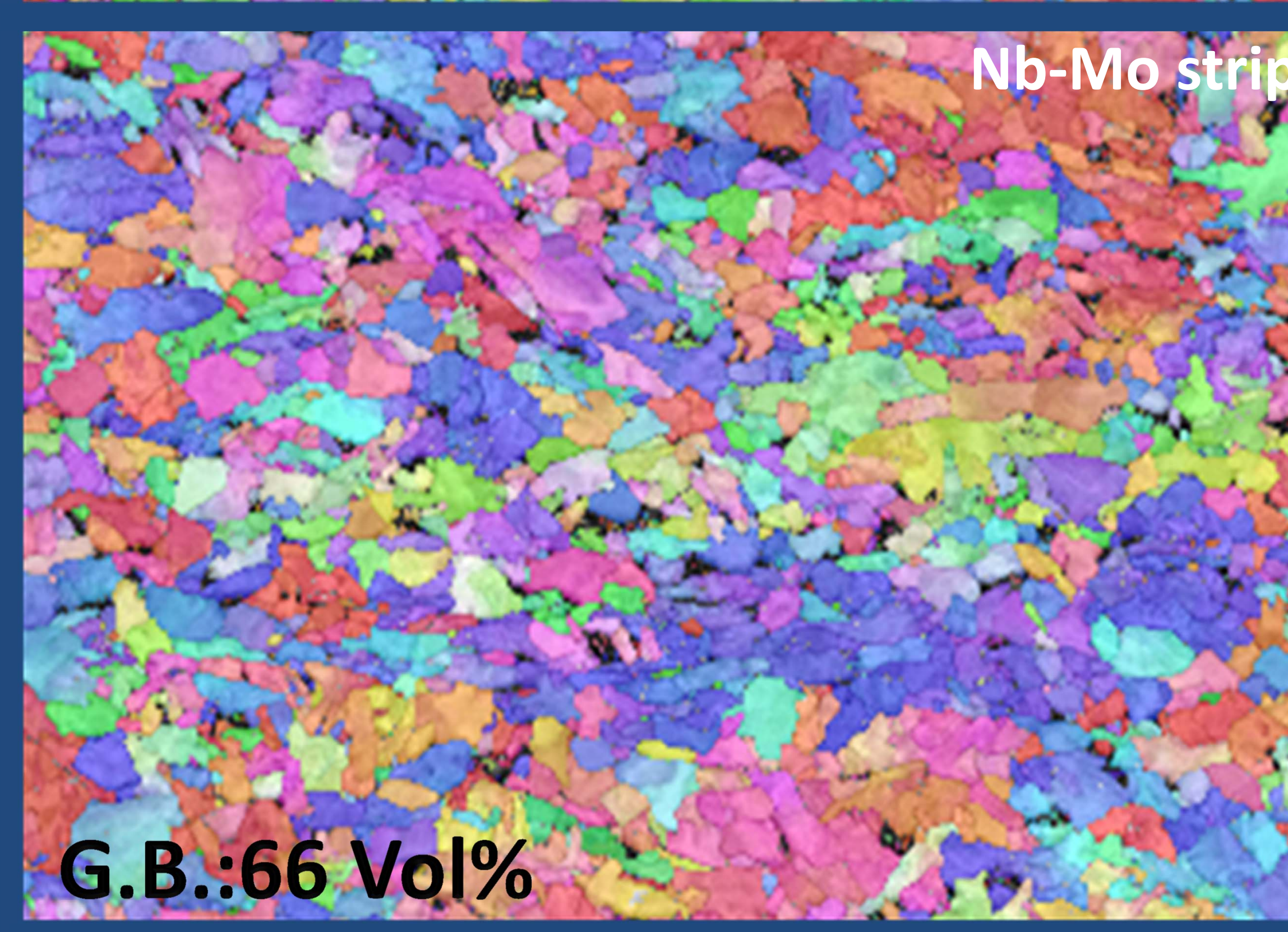
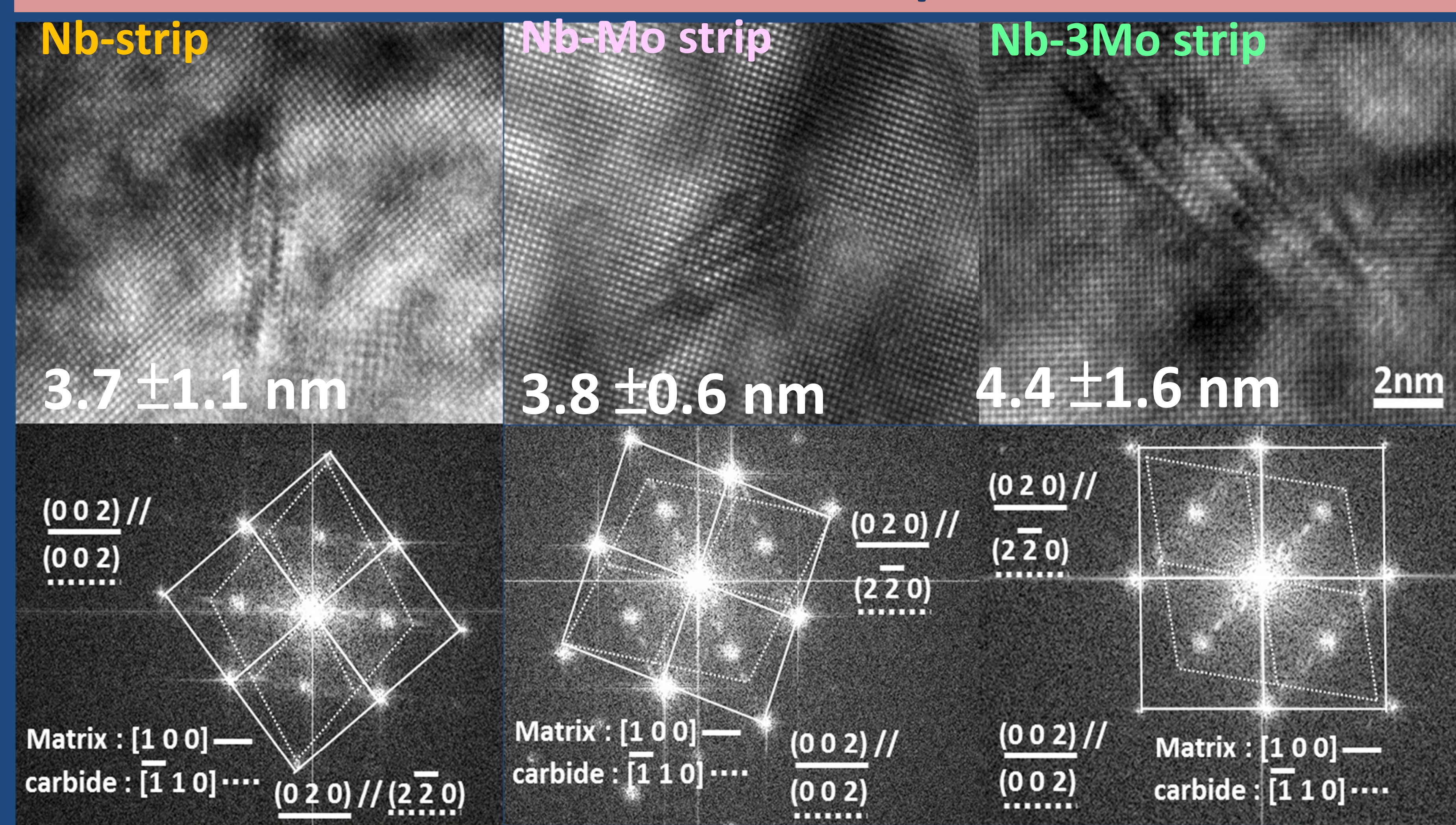
Overall view



### Quantification



### Nanometer-sized carbides at tempered bainitic ferrite



### Conclusion

It is manifested that 0.3wt% Mo effectively increases amount of granular bainite and has rare influence on Nb carbides at bainite.

### Acknowledgement

