

SURFACE TREATMENTS ON ORNAMENTAL ROCK PLATES TO REDUCE RADON AND THORON EXHALATION RATES

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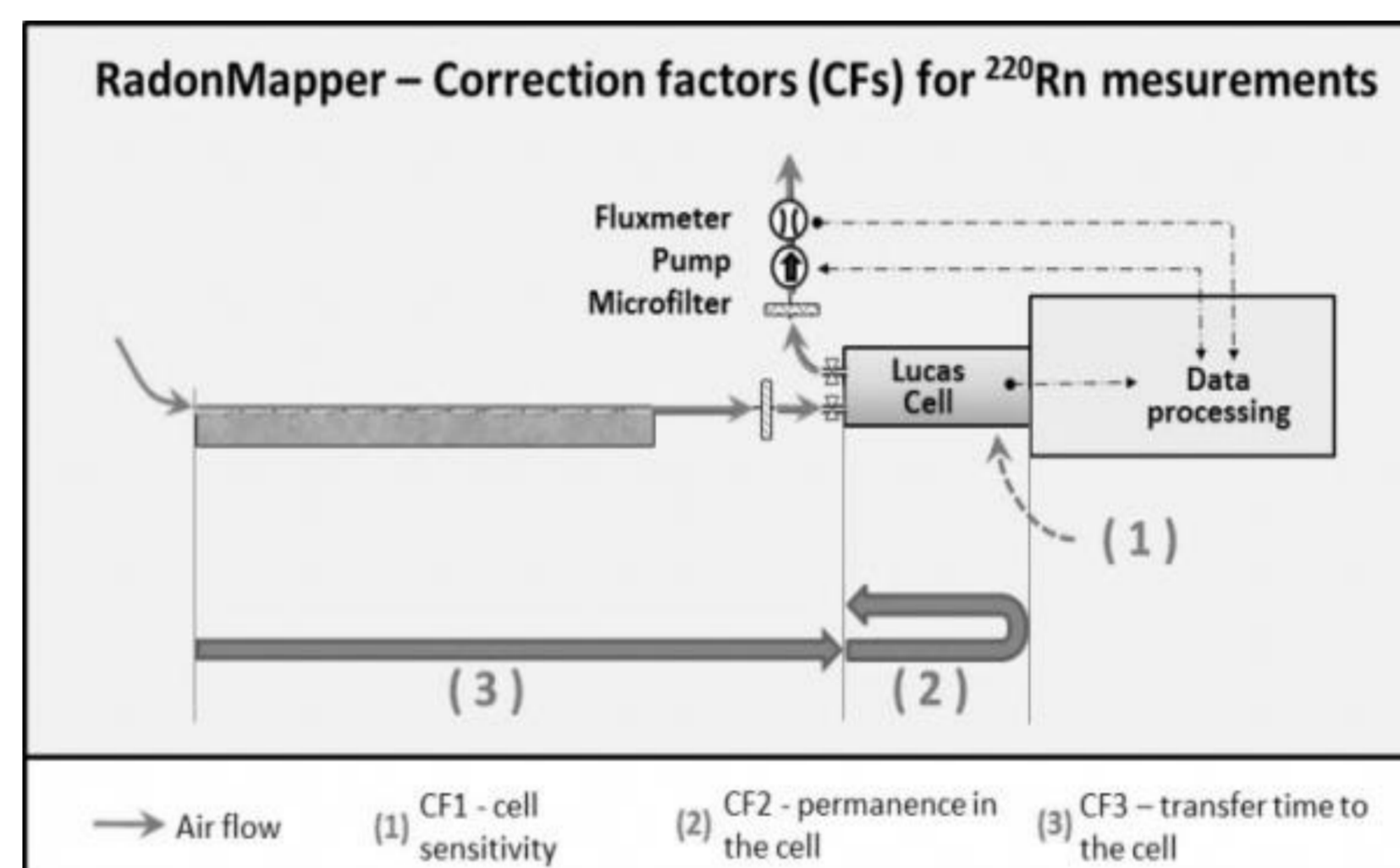
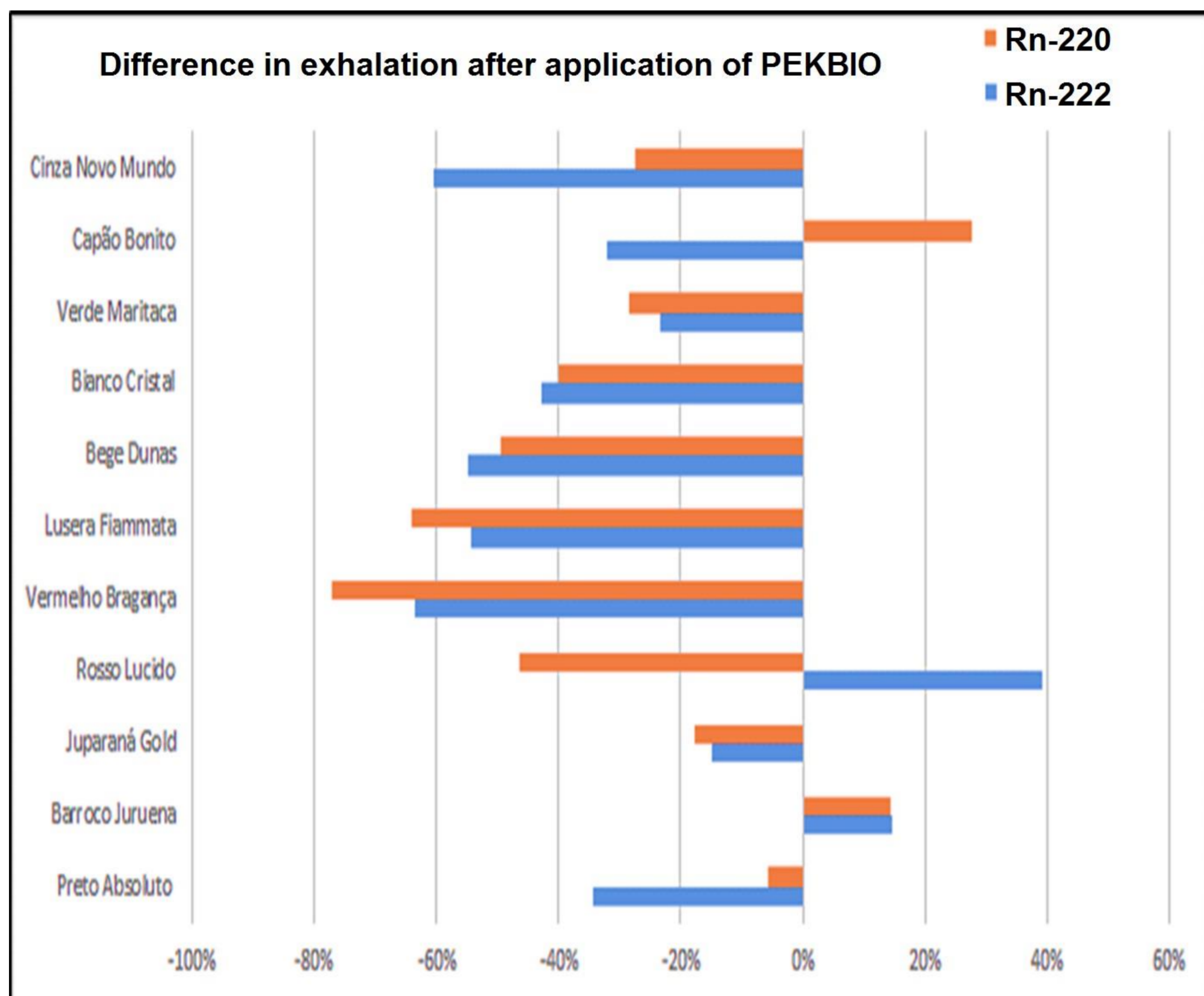
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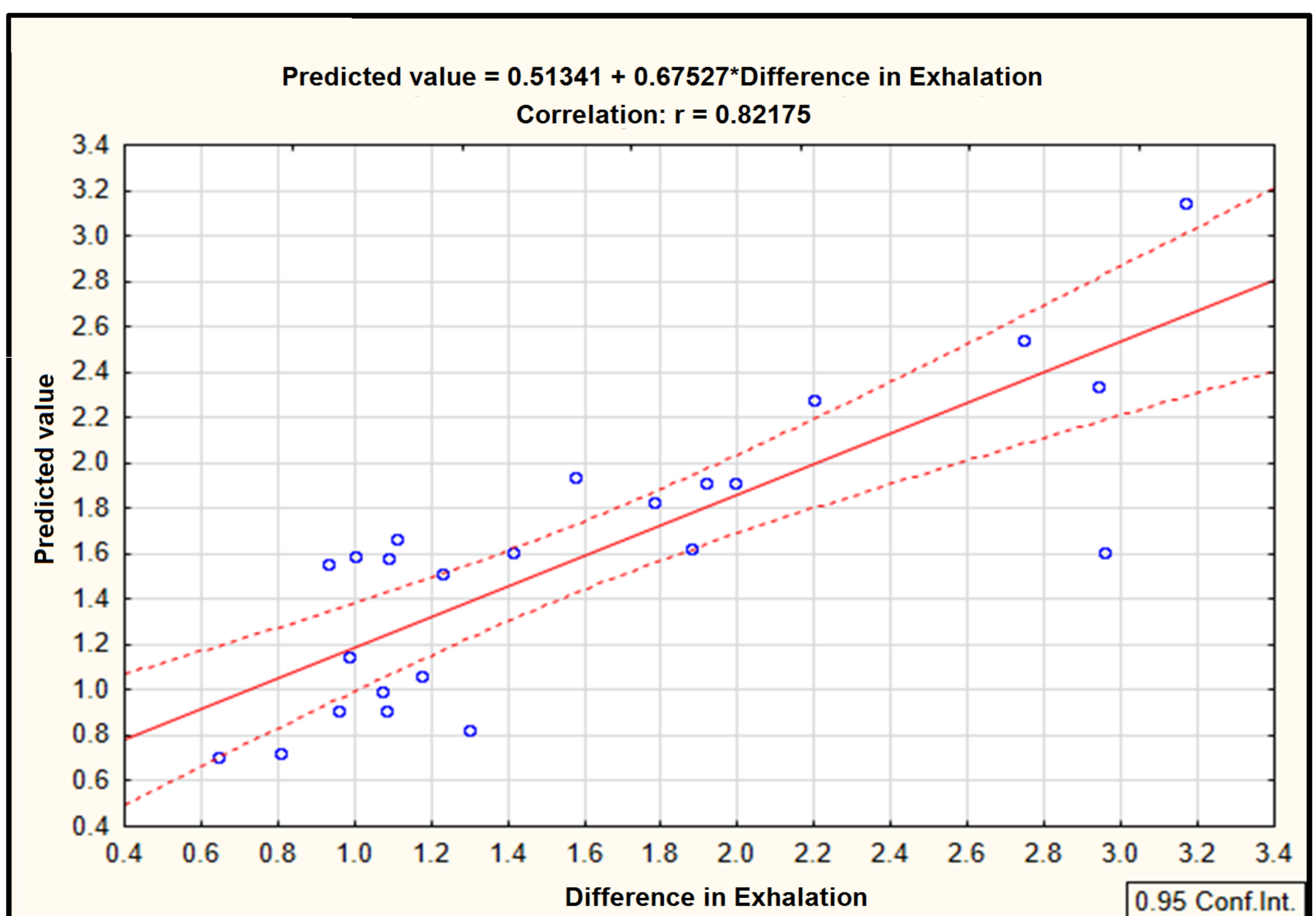
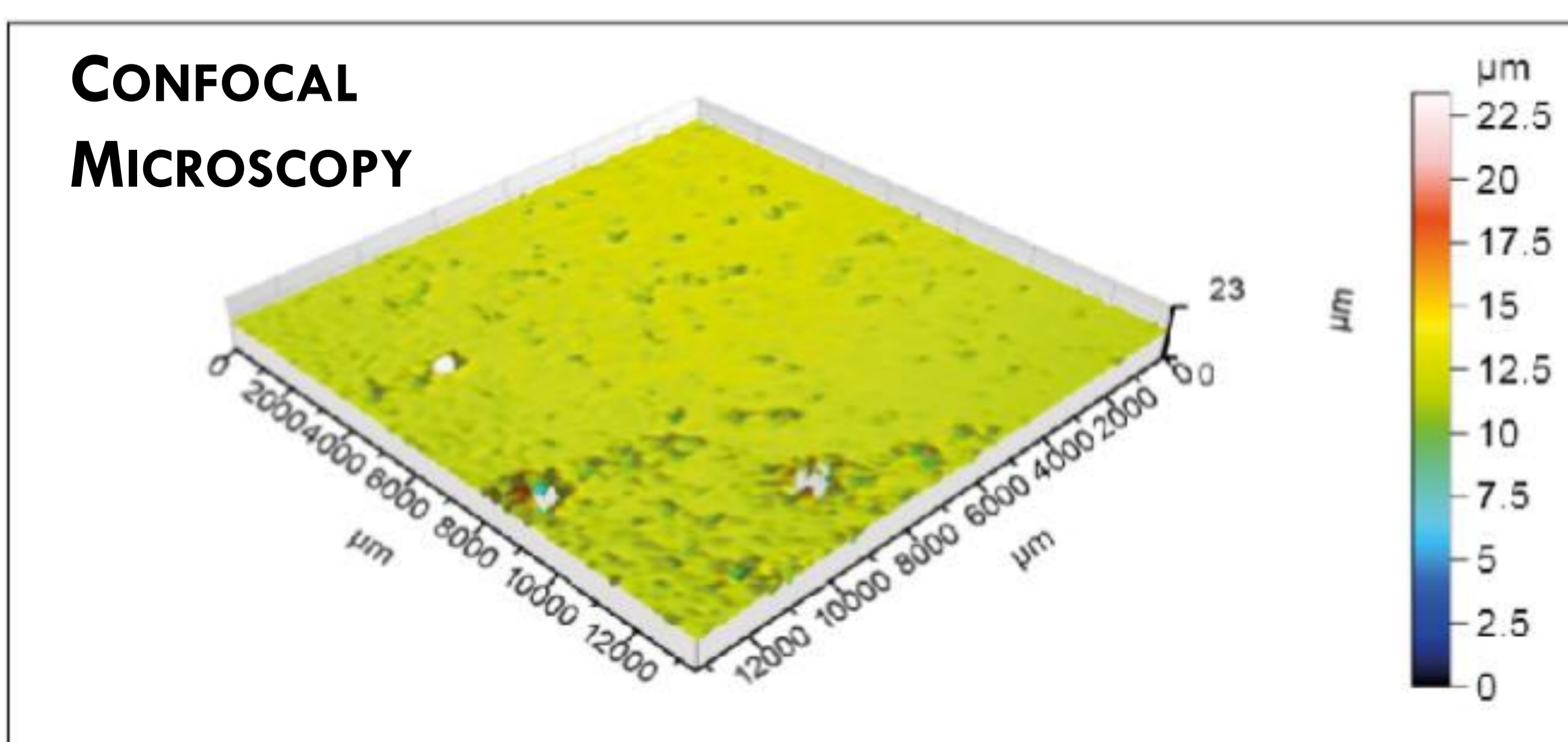
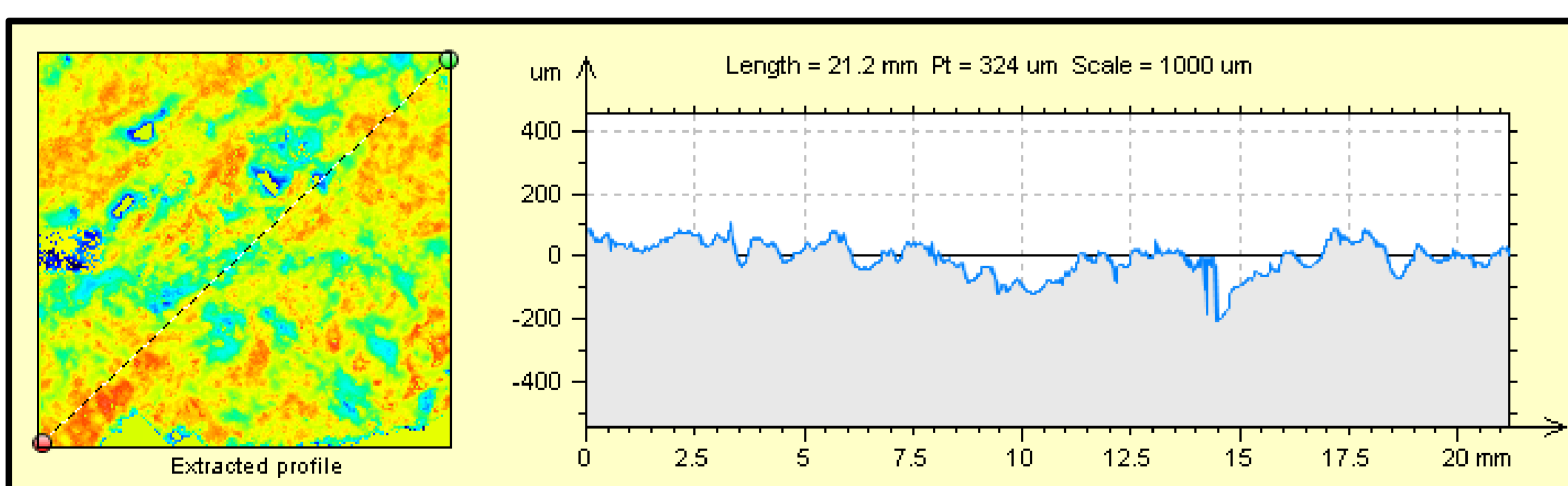
PROBLEM FORMULATION

Radioactive radon gas isotopes are generated from any soil or rock containing uranium and thorium in its composition. Thus, ornamental rocks used in construction are natural sources of radon and can generate indoor concentrations higher than those recommended internationally. As Brazil is an important producer and exporter of ornamental rocks; two methods for reducing radon and thoron exhalation rates were investigated in this research.



Pair of variables	Values marked in red are significant for p < 0.05			
	Valid N	T	Z	p-value
Rn-220 (PEK BIO) & Rn-220	11	10.00000	2.044949	0.040861

Pair of variables	Values marked in red are significant for p < 0.05			
	Valid N	T	Z	p-value
Rn-222 (PEK BIO) & Rn-222	11	6.000000	2.400593	0.016369



Conclusions: The main results were: the exhalations of Rn-222 and Rn-220 decreased by 29% and 31%, respectively, with the application of the hydro/oilphobic product. Regarding the polishing, the exhalations of Rn-222 decreased by 16% and Rn-220 by 29%. Both surface treatment methods were validated with the nonparametric Wilcoxon Signed Rank Test.