Electronic Supplementary Material (ESI) for Analytical Methods.


# Automated in-chip-catalytic-spectrophotometric method for determination of copper(II) using a multisyringe flow injection analysis-multipumping flow system

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## Appendices. Supporting information

**Table A1.** Results of multivariate analysis. Two level ($2^{4-1}$) factorial design.

| Factor and interaction | Exp Domain | Std/blank[a] | | Slope[b] | |
|---|---|---|---|---|---|
| | | Pareto's coefficient | p-value | Pareto's coefficient | p-value |
| Ascorbic acid (mmol $L^{-1}$) | 2-4 | -34.34 | 0.0008 | -43.42 | 0.0005 |
| DCPI (mmol $L^{-1}$) | 0.3-0.5 | -17.18 | 0.0034 | 31.88 | 0.0010 |
| Buffer (mol $L^{-1}$) | 0.1-0.5 | 20.69 | 0.0023 | 26.11 | 0.0015 |
| $H_2O_2$ (mol $L^{-1}$) | 0.02-0.10 | 32.95 | 0.0009 | 20.40 | 0.0024 |
| DCPI vs buffer | | -19.46 | 0.0026 | -5.10 | 0.0363 |
| DCPI vs Ascorbic acid | | 9.41 | 0.0111 | 10.33 | 0.0092 |

[a]The std/blank results fitted well with 2-way interaction, without a significant lack of fit ($r^2$ = 0.99943, adj. 0.99713), and a pure error of 0.0040.

[b]The slope results fitted well with 2-way interaction, without a significant lack of fit ($r^2$ = 0.99953, adj. 0.99765), and a very low pure error (0.0000).

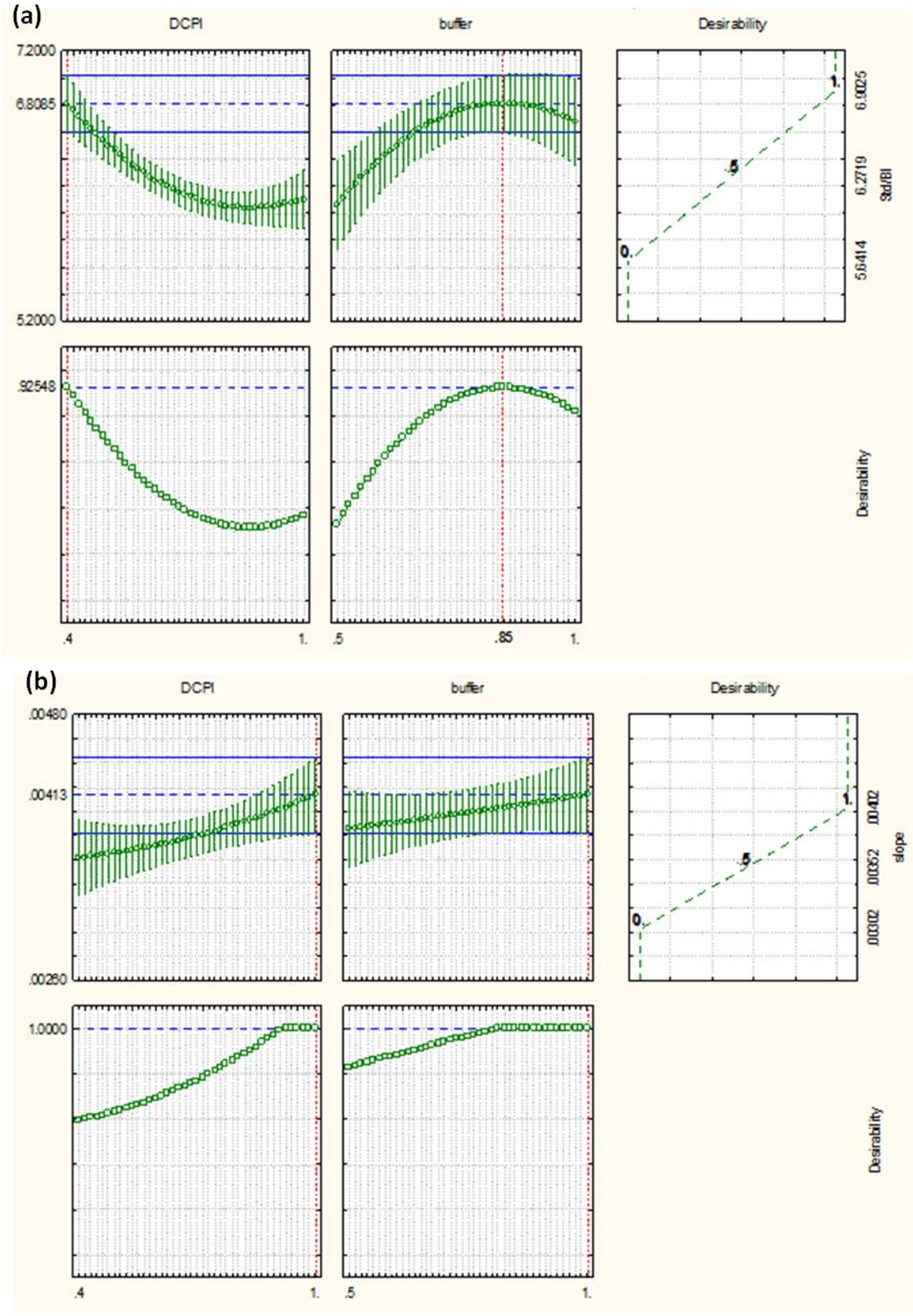


**Fig. A1.** Profiles of predicted values and desirability function obtained using as dependent variable (a) the *ratio* between the peak height of standard and blank (Standard/Blank), (b) the *slope* of the first second of the kinetic curve.