The semi-empirical relation for metals extraction containing interactions between the existing parameters is defined as follows:

Recovery of Copper (%) = 98.16791 + 92.94 * [GLY] -0.94839 * S/L - 4.83706 * pH - 40.3195 * H_2O_2 -46.3501 * [GLY] * H_2O_2 + 8.15275 * pH* H_2O_2 - 40.27973 * [GLY]² + 0.00307692 * S/L²   (1)

Recovery of Zinc (%) =40.76864 + 92.97376 * [GLY] -1.08869 * S/L + 95.033* H_2O_2 - 46.4488 * [GLY] * H_2O_2 - 42.0622 * [GLY]² + 0.003645 * S/L² - 45.95 * H_2O_2 ²   (2)

Recovery of Cadmium (%) = 60.17453 + 85.1278*[GLY] - 0.975375 * S/L - 5.04142 * pH + 39.085 * H_2O_2 - 0.174766 * [GLY]* S/L - 28.1142 * [GLY]* H_2O_2 + 0.046859 * S/L* pH -0.1904 * S/L * H_2O_2 - 19.275 * [GLY]² + 0.002308* S/L²   (3)

Recovery of Lead (%) = 243.24 - 39.386 * [GLY] - 0.943714 * S/L - 43.89817 * pH + 7.33 * [GLY] * pH + 0.066310 * S/L* pH + 0.001021 * S/L² + 2.06491 * pH²   (4)

Recovery of Tin (%) = 104.91353 - 19.30147 * [GLY] + 1.39876 * S/L - 39.65141 * pH + 54.54306 * H_2O_2 + 3.86568 * [GLY] * pH - 0.143727 * S/L* pH - 4.67082 * pH * H_2O_2 -8.71794 * [GLY]² + 2.88745 * S/L²   (5)