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A study of plasma oxidation effects on the corrosion resistance of BRass

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A study of the plasma oxidation and corrosion resistance mechanism of oxidized (63.5Cu36.5Zn) brass in oxygen plasma and Mattson solution is reported. Brass was exposed to pulsedoxygen plasma in given working conditions (working pressure, frequency, duty ratio, and working temperature) and the resulting surface was studied. The plasma oxidation mechanism involves oxygen radicals, and results from their strong oxidizing character. The ZnO was identified dominantly in the passive layer, in addition to precursor oxide Cu_xO , Cu_2O and CuO . Most of these oxides also form as corrosion products when brass samples are oxidised in Mattson solution.