

WATER TREATMENT USING NON-THERMAL PLASMA

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Abstract: Oxidation of water containing iron and manganese with non-thermal plasma (NTP) is a suitable method to convert dissolved metals into insoluble oxidation products and subsequently remove them with conventional separation processes (e.g. sand filters or UF membranes), thus avoiding the disadvantages of oxidation with ozone or potassium permanganate.

The aim of this study is to demonstrate the efficiency of NTP for oxidation in combination with filtration for iron and manganese removal under different conditions: operating time, Mn(II) and Fe(II) concentrations, dissolved organic carbon (DOC) concentration, bromide concentration, and to determine the limits of its use.

Keywords: Non-thermal Plasma, manganese, iron, water treatment, advanced oxidative process