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Photocatalytic ozonation under visible light for the remediation of water effluents and its integration with an electro-membrane bioreactor

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1 Photocatalytic ozonation under visible light for the
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13
14 **Abstract**

15 Photocatalysis and photocatalytic ozonation under visible light have been applied for the
16 purification of a complex aqueous matrix such as the grey water of Masdar City (UAE), by using
17 N-doped brookite-rutile catalysts. Preliminary runs on 4-nitrophenol (4-NP) solutions allowed to
18 test the reaction system in the presence of a model pollutant and to afford the relevant kinetic
19 parameters of the process. Subsequently, the remediation of grey water effluent has been
20 evaluated in terms of the reduction of total organic carbon (TOC) and bacterial counts. The
21 concentration of the most abundant inorganic ionic species in the effluent has been also

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