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## ACCEPTED MANUSCRIPT

# Thermal annealing effect on nitrogen-doped TiO<sub>2</sub> thin films grown by high power impulse magnetron sputtering plasma power source

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#### **Abstract**

The work reports plasma assisted growth of nitrogen-doped titanium dioxide (N-TiO<sub>2</sub>) thin films using high power impulse magnetron sputtering (HiPIMS) power source and effect of post-deposition thermal annealing. The films were deposited at low pressure. The binding energies of elements of interest, the energy gap, crystallinity and morphology of the films were analyzed before and after annealing. The results showed an increase in binding energies, a fact attributed to enhanced

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