

### Effect of Polyvinylpyrrolidone (PVP) in the synthesis of nano structured PbO<sub>2</sub>

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PbO<sub>2</sub> is an only electrode material to replace BDD electrode and importantly it is a good resistance to corrosion, long life time and high over potential to oxygen evolution. Apart from electrochemical synthesis, chemical methods of synthesis in presence of surfactant plays an important role due to controlling factors such as CMC value of surfactant, hydrophobicity and hydrophilicity of surfactant, which leads to formation of nano particles in defined morphology. On these basis, we have synthesized nano structured PbO<sub>2</sub> from the mixture of PVP and Triton x 100 at room temperature. The optimized concentration of both surfactants was studied. The material is characterized by the XRD, SEM and TEM. As a result PbO<sub>2</sub> to rod like morphology was achieved with nano in size.