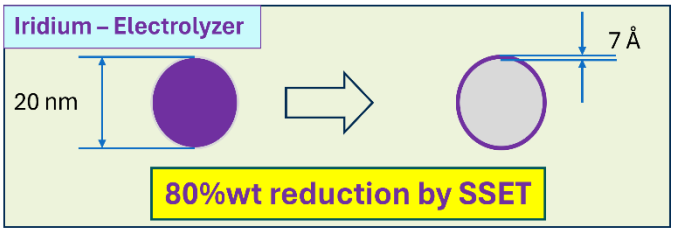
Solid State Electroplating Technology

As thin film supported catalysts possess dramatic properties that other nanoparticles on support for electrochemical or other applications. Coating nanoparticles with a uniform and intact thin film with controllable thickness and composition had not been achieved by any existing technologies and processes. Blue-O has developed a unique process that can electrically plating an ultrathin film coating on various nanometer size supports. One example Blue-O has produced angstrom thin film coated on carbon support for fuel cell application in 2021. This unique thin film coated support electrocatalyst has shown extensive durability as well as its sustained high-power performance. Their ECSA was sustained with less than 10.0% over the later 150,000 voltage cycles. This property was not seen in any other supported PMG catalysts.

This unique process technology SSEP can fabricate various potent thin-film-on-core (TFOC) nanomaterials with various desired properties for a wide range of applications. For example, metallic nanoparticles for optical storage (ODS) media. By changing gold nanospheres to 1 nanometer thin film coated nanospheres will save up to 92% of gold for a size of 70 nm. The success of production of Au-TFOCs for ODS will boost its affordability and stability.



Case scenario II, SSEP can produce Iridium thin film coated on a nanosized support to reduce its loading in water electrolyzer. For average 20 – 30 nm size raw Ir-IrOx nanocatalysts, the mass reduction can reach 80%.

Blue-O is looking for able partner(s) to scale up its process for pilot production line. Come to visit us at Canada Pavilion at Hall 13 of 2024 Hannover Messe Germany.