

## **Densification and Corrosion Studies of As-Sintered-Swaged Al Composite Preforms**

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**Abstract.** The classical P/M technique was used to produce composites of Al-2WC-4Fe<sub>3</sub>C, Al-2WC-8Fe<sub>3</sub>C and Al-2WC-12Fe<sub>3</sub>C and it is further subjected to hot upsetting to evaluate densification and corrosion characteristics. Process parameters such as initial density, preform geometry and deformation media were kept constant to analyse this behaviour. The as-sintered compacts were subjected to swaging to different height strains, thus expected to eliminate residual porosities out of classical P/M technique consequently improve its densification and corrosion characteristics. As the known limitation of the classical P/M process is the presence of porosity that restricts structural and corrosion related applications. It is observed from the results that strain induced improves the density substantially, which eventually promoted anti-corrosion properties. Further prediction was the addition of carbide particle in pure Al decreases the densification and increases the corrosion rate.