

Development of an improved design of field shaper using Electro-Magnetic field simulations

- Electro-Magnetic Pulse Welding (EMPW) is a high energy-rate manufacturing. In this process, high energy capacitor banks are discharged into a tool coil generating high magnetic fields.
- The objective of the present work is to develop an improved design of field shaper that may withstand multiple use, thus, resulting in a cost reduction of the EMPW process.
- 3D transient Electro-Magnetic-Structural analyses are performed for estimation of induced current and magnetic field intensity in the field shaper.
- Structural deformations in the existing design of field shaper are computed and numerical predictions are in good agreement with the experimental results.

