**Design Analysis Of Train Brake**

**Abstract:**

The disc brake is a device for slowing or stopping the rotation of a wheel. A brake disc (or rotor), usually made of cast iron or ceramic composites (including carbon, Kevlar and silica), is connected to the wheel and/or the axle. To stop the wheel, friction material in the form of brake pads (mounted on a device called a brake caliper) is forced mechanically, hydraulically, pneumatically or electromagnetically against both sides of the disc. Friction causes the disc and attached wheel to slow or stop. Brakes convert friction to heat, but if the brakes get too hot, they will cease to work because they cannot dissipate enough heat. This condition of failure is known as brake fade. Train brakes are exposed to large thermal stresses during routine braking and extraordinary thermal stresses during hard braking. The aim of the project is to model a Train brake used in Locomotives. Structural, and Thermal Analysis is done on the Train brake. By varying composite materials such as Cast Iron, Carbon steel and Aluminium Metal Matric Composite. Modeling is done in CATIA and analysis is done in Ansys-Workbench.

Keywords: ANSYS-WORKBENCH, Cast Iron, Carbon steel& Locomotive Train brake