**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 (as well as Kevlar, carbon and silica), is coupled to the wheel and/or the axle. To stop the wheel, resistance material in the form of brake pads (mounted on a device called a brake caliper) is forced hydraulically, pneumatically, mechanically or electromagnetically against both sides of the disc. Friction causes the disc and attached wheel to slow or stop. Brakes alter frictional energy into thermal energy, but if the brakes get red hot, they will strike and stop work because they cannot dissipate enough temperature. This situation of failure is known as brake fade. Disc brakes bare to large thermal stresses during regular braking and extraordinary thermal stresses during hard braking.

The aim of the project is to model a disc brake used. Thermal analysis is done on the disc brake. The materials used are stainless steel, aluminum alloy and cast iron. Analysis is also done by changing the design of disc brake. Authentic disc brake has no holes; design is altered by giving holes in the disc brake for more heat indulgence. Modeling is cumulated in solid works and analysis is done in Ansys 14.5