

Proceedings of the 3<sup>rd</sup> Annual World Conference  
of the Society for Industrial and Systems Engineering,  
San Antonio, Texas, USA  
October 20-22, 2014

# Geometric Deformation Analysis in Machining Processes of an Inconel 600 Super Alloy

**I. Gallardo and I. Escamilla-Salazar**

Universidad Autonoma de Nuevo Leon FIME  
Av. Universidad s/n, San Nicolas de los Garza, Nuevo Leon, Mexico

Corresponding author's Email: [irving.gallardo@hotmail.com](mailto:irving.gallardo@hotmail.com)

**Author Note:** I want to express gratitude to the Universidad Autonoma de Nuevo Leon (UANL) for facilitating in the accomplishment of this work, and for giving me the tools and resources necessary to develop this project. In addition, I am grateful to them for making available their facilities and teachers with knowledge in this area. Also, I would like to thank the Consejo Nacional de Ciencia y Tecnologia (Conacyt) for providing the financial resources to conduct the necessary research and paperwork. Finally, I would like to thank the people that directly or indirectly contributed to making this project possible.

**Abstract:** Through the realization of this work an investigation is documented of dimensional changes that the super alloy Inconel 600 presents once machining operations are performed under controlled manufacturing conditions. In the first stage of the investigation, with research in specialized literature; the objective will be to increase the knowledge basis to create a wider outlook of the current super alloy materials and machining operations applied in today's industrial operations and those under investigation in related materials. From this basis a methodology for study of super alloys will allow simulation to represent the effects of machining operations creating changes or distortions in the super alloy Inconel 600 surface in samples used for studying these effects. Consequently, this will let us correct settings in manufacturing processes to eliminate problems that could affect the quality or integrity of produced industrial parts, and avoid financial risk involved in the industrial production of these materials.

**Keywords:** Inconel 600, Machining, Simulation, Geometrical Deformation.