The search for innovative solutions, aligned with the growing need for more efficient manufacturing operations, is a problem solving process. The growth of the battered chicken nugget market is associated to a higher purchasing power and desire for healthier and tastier foods. This study aimed to integrate functional analysis, used in Theory of Inventive Problem Solving (TRIZ), with the Statistical Control Process (SPC), as a support tool for monitoring and identification of improvement opportunities in the implementation of coating. Failure to comply with specifications might mischaracterize flavor and physic-chemical product properties, besides provoke excessive consumption of ingredients and parts above or below specified weight. We conducted a quantitative and exploratory research, with a case study performed during the production of battered chicken nuggets for export to the European market. The performance evaluation of the process was conducted in the stage before starting the batter (initial weight) and in pre-dust and batter application steps, in two moments: before and after adopted changes in the process. The percentage of units outside specifications in the evaluations of the three stages of coating reduced to 0.006%, 0.00005% and 0.08%, respectively, resulting in values of process capacity (Cpk) considered optimal to the first two steps. Hence, it was observed that the integration of TRIZ within SPC, by functional analysis and the Ideal Final Result (IFR) might represent an advance in the management process.

**Keywords:** Theory of Inventive Problem Solving, TRIZ, Statistical Process Control.