Objective

- Least Build Time & Cost.
- Higher Dimensional & Shape Accuracy.
- Higher Surface Finish
- Better Mechanical Properties (Density, Hardness, Strength)
- Minimum Thermal Residual Stresses
- SLS is a very Complex & Dynamic Process.
- Multi Objective – Multi Variable Process.
- Behavior of the system (Temperature field distribution) can be predicted by such a model.
- Physics of the problem is better understood.
- Reduces cost of experimentations saves time.

The central focus of this research is on the multi-physics modeling and characterization of the LSFF process. This is an important step for studying the underlying physics of complex and multidisciplinary processes such as the LSLM process, since it can reduce the number of experimental tests required, and provide data that sometimes are not possible to obtain through experiments. In the course of study, several challenges and drawbacks involved in further development of this technique such as delimitation and crack formation are addressed and comprehensively investigated. The research was conducted with an inclination towards utilizing the LSLM process for fabrication of heterogeneous structures, which have many applications in multidisciplinary environments such as biomedical engineering.