

# COMSOL Simulation of Flash Lamp Annealed Multilayers for Solid State Electrolyte Fabrication

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## Abstract

All-solid-state batteries are among the next generation battery concepts that are currently being envisaged among both the international research community and industrial electronic vehicle producers. In addition to a long lifetime of more than several thousand cycles and intrinsic safety, applying solid electrolytes offers a high energy density due to larger electrochemical windows. Aluminum is an excellent candidate because of its theoretically high capacity, and its high abundance. However, finding a suitable solid state electrolyte and its fabrication are challenging. In this work, temperature variations across  $\text{Al}_2(\text{WO}_4)_3$  multilayers during thermal treatment using flash lamp annealing (FLA) is computed, as well as the maximum temperatures for various flash conditions, like as pulse time, pulse energy and preheating temperature, are obtained.

## Figures used in the abstract

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Figure 1

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Figure 2

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Figure 3

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**Figure 4**