High-Power Laser BEAM Welding

- A stationary magnetic field is applied to improve the quality of welding and counteract effects such as spattering and ejection of droplets from the weld pool.
  - To accurately model and simulate the process, heat transfer, fluid dynamics, and electromagnetics have been coupled and solved with COMSOL Multiphysics, and the CFD and AC/DC Modules.


Temperature plot of a weld showing simulation results when a magnetic field is applied.

Photo of a weld with the simulation results superimposed.