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- Proposer: LITESPEED ENERGY (lead company)
- Collaborator 1: Sandia National Lab (SNL)
- Collaborator 2: D2 Solar
- PI: Dr. Joe Kramer (LSE)

Hooks integrated in PV module



Carrying handle on backside of PV module



Safe, Easy Install, Lightweight Turnkey System For Residential PV Solar

Key idea:

- Lightweight, low-cost residential turnkey PV system that simplifies install and enables DIY Solar.
“R-SPRINT™”: Residential Solar Panel Racking INTe grated
- Take holistic system level development approach to overcome safety and complexity issues in residential PV installation:
 - Central carrying handle for PV module allows single hand under arm carry on sloped roof
 - High efficiency (Mono-PERC Si) module with nonconductive frame and integrated microinverter option requires no grounding on roof
 - Submount structures on roof tailored to module
 - Module-integrated attachment hooks → attach module to roof submount without tools, single person installation
 - 35% lighter system → installation on older roofs that otherwise would be rendered not solar compatible

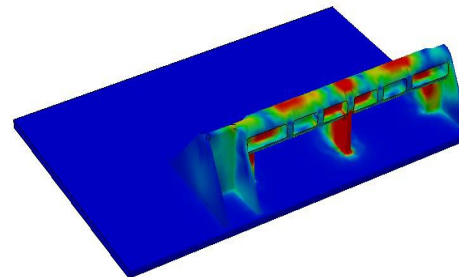
Project Impact:

- Enable safer installation, with fewer accidents
- Bring Residential PV to a much broader market, especially low-income by providing low cost and viable option for DIY Solar

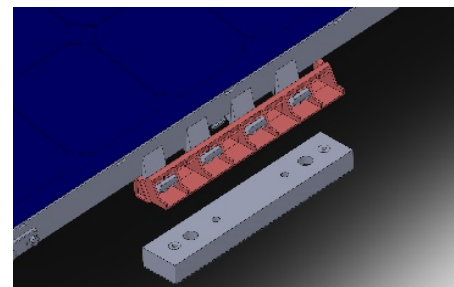
Project Goals:

- Develop, demonstrate and characterize POC for integrated system
- For Set! Demo day: demonstrate POC of tool-free PV module mounting fixtures, use existing module frame
- For Go! Demo day: demonstrate subscale POC of optimized PV module & frame with integrated residential rooftop mounting fixtures
- After: Develop full scale prototype of integrated R-SPRINT system

Roof attachment load modeling (FEA)



Attachment: Mount without tools



Preinstalled microinverter, hinged

