System-Level Analysis of Microchannel Cooling Systems
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**Objective**

Develop a design tool for rapid system-level design and analysis which allows for optimization of microchannel heat sinks for available commercial mini-pump flow space & volume specifications.

**Impact**

Successful integration of microchannels into commercially viable microsystems will likely be determined by system-level factors such as energy efficiency, weight, volume, manufacturability, and ultimately, cost.

**Approach**

- **Identification of process constraints**
  - Minimum feature size
  - Maximum aspect ratio

- **Microchannel optimization for application**
  - Ideal design - no constraints

- **Design for manufacturability**
  - Practical design – optimize with process constraints

- **Candidate processes ranking**
  - Based on thermal and process capability
  - Based on cost effectiveness

**For more information:**