With the advances in technology made over the last several years, there has arisen a need for smaller, more efficient heat exchangers. The heat exchanger designs available today are often too large, too impractical, or too expensive to implement in certain situations where space or weight is a concern. We are proposing a new geometry for heat exchange, composed of truncated octahedron building blocks. These heat exchangers will be tested for pressure drop and flow distribution. If the tests provide desirable results, this new design has a myriad of possibilities for use, including nuclear propulsion applications, microelectronic machine systems, and cooling for electronic chips.