

## **A numerical investigation of thermal airflows over strip fin heat sinks**

The benefits of using strip fin heat sinks (SFHSs) where the cross-sectional aspect ratio of the fins lie between those for plate fins (high aspect ratio) and pin fins (aspect ratio  $\approx 1$ ) are explored computationally, using a conjugate heat transfer model. Results show that strip fins provide another effective means of enhancing heat transfer, especially when staggered arrangements of strip fins are used. A detailed parameter investigation demonstrates that perforating the strip fins provides additional improvements in terms of enhanced heat transfer, together with reduced pressure loss and heat sink mass. Results are also given which show that, for practical applications in micro-electronics cooling, perforated SFHSs offer important benefits as a means of achieving smaller processor temperatures for reduced mechanical power consumption