

Erratum to the DATE 2020 Paper: A Learning-Based Thermal Simulation Framework for Emerging Two-Phase Cooling Technologies

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Table IV has been updated following corrections in the dry-out heat flux code. We have rerun the coarse-grained grid search method and the proposed multi-start simulated annealing (MSA) approach for each of the experimental floorplans to regenerate Table IV. The changes compared to the original table are marked in red color. The overall findings of the paper are not impacted by the changes in this table. The differences in the reported temperature and speedup numbers after revising the results are negligible compared to the original results in the paper. For more information regarding the coarse-grained grid search and the proposed MSA approaches, please refer to the original paper¹.

TABLE IV: Optimization results for grid search and MSA. The optimal hybrid wick geometry is written in a format of $\{t (\mu m), dp (\mu m), \phi, AR, SF, w (\mu m)\}$. The Table on the top shows the grid search results. The bottom table contains the results of MSA.

Floorplan	Hot Spot Power Density (W/cm^2)			
	100	500	1500	2000
1	R245fa{1.00, 0.20, 0.40, 1.50, 0.30, 4.00}	R245fa{1.00, 0.20, 0.40, 1.50, 0.30, 6.00}	R245fa{1.00, 0.20, 0.80, 1.50, 0.30, 8.00}	R245fa{0.75, 0.20, 0.40, 2.00, 0.30, 8.00}
2	R245fa{0.50, 0.05, 0.20, 2.00, 0.20, 8.00}	R141b{0.75, 0.05, 0.20, 2.00, 0.10, 8.00}	Water{0.25, 0.05, 0.20, 1.50, 0.10, 4.00}	Water{1.00, 0.20, 0.60, 1.00, 0.10, 8.00}
3	R245fa{1.00, 0.05, 0.20, 2.00, 0.20, 8.00}	R141b{1.00, 0.05, 0.20, 2.00, 0.20, 8.00}	Water{1.00, 0.20, 0.60, 1.50, 0.20, 6.00}	Water{1.00, 0.20, 0.60, 1.50, 0.20, 8.00}
Floorplan	Hot Spot Power Density (W/cm^2)			
	100	500	1500	2000
1	R245fa{0.95, 0.19, 0.23, 1.88, 0.33, 4.44}	R245fa{0.91, 0.18, 0.32, 1.30, 0.27, 6.15}	R245fa{0.94, 0.16, 0.47, 1.92, 0.40, 7.77}	R245fa{0.95, 0.10, 0.43, 1.90, 0.14, 7.07}
2	R245fa{0.99, 0.05, 0.23, 2.00, 0.17, 8.00}	R141b{0.74, 0.05, 0.21, 1.99, 0.12, 8.00}	Water{0.99, 0.10, 0.39, 1.36, 0.16, 7.25}	Water{0.93, 0.16, 0.45, 1.85, 0.33, 6.80}
3	R245fa{0.99, 0.05, 0.33, 1.99, 0.22, 7.99}	R141b{0.99, 0.05, 0.20, 1.94, 0.30, 8.00}	Water{0.98, 0.19, 0.48, 1.69, 0.19, 6.40}	Water{0.90, 0.10, 0.45, 1.69, 0.14, 7.99}

¹Link to the original paper: <https://ieeexplore.ieee.org/document/9116480>