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## **Fabrication of Test Chips** for Two-phase Cooling Experiments

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## INTRODUCTION

This work involves the design and fabrication of silicon chips used for the



Dielectric

characterization and verification tests of two-phase cooling of 3D integrated microprocessors. The chips comprise microheaters emulating the power dissipated by active components in a CMOS chip, resistive-thermal-devices (RTD) as temperature sensors, backside micro-channels in various dimensions and configurations, and finally a pyrex cover for both channel sealing and visual inspection.



## **2<sup>nd</sup> Generation – Fabricated Structures**

- wafer before anodic bonding and dicing.
- Each chip has two microheaters enabling uniform and four RTDs as temperature distribution temperature sensors.



