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## The micro-cooled light support of the pixel modules for the Super-B experiment

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Pixel detectors require that high power density in the sensitive area should be carried away by thermal systems, eventually integrated in the light mechanical support structures. The micro-channel cooling technology is characterized by a highly efficient thermal exchange. It can profit of the miniaturization techniques employed on composite materials, allowing important advantage in terms of material reduction. We present the design of the mechanical supports for the pixel layer of the Super-B Silicon Vertex Tracker, using micro-channel cooling technology through forced convection. The thermal tests of the prototypes for a dissipated power of  $2 \text{ W/cm}^2$ , supplied with a liquid coolant at  $10^\circ\text{C}$ , have shown that the sensor remains below the operating temperature with material thickness of  $0.11 \% X_0$ . FEA simulations, structural and thermo hydraulic characterizations are reported.

### for the collaboration

On behalf of the SVT-SuperB Group

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