The us ing of $CO_2$ la ser in op er a tion room has been in ten sified in last few de cades, re - quiring deep in sight into the ther mal be havior of tis sue sub jected to la ser beam. Us ing $CO_2$ la ser as a scalpel is stud ied here, with tem per a ture dis tri bution, char depth and ve - locity of ablation obtained numerically for different porosities. A moving finite element mesh has been used with an iter a tive so lution pro cedure based on a band ma trix solver.

The effect of porosity for different type of tis sues is stud ied for la sers with different power in ten si ties. Some con clusions have been reached; a re duction in char layer depth can be obtained as power in ten sityin crease; also for the same la ser power as po - rosityin creases the char depth may de crease. A good agree ment of the re sults with typ -

ical ex per i men tal data is obtained which ver i fies the pro posed method of so lution.