



Escola Superior d'Enginyeries Industrials,
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UNIVERSITAT POLITÈCNICA DE CATALUNYA

An investigation of the thermal conductivity of epoxy resin systems filled with boron nitride particles

Budget

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Studies: Grau en Enginyeria en Vehicles Aeroespacials

Delivery date: 10th of June

Budget

All the materials that has been used during the development of the TFG has been quantified to elaborate the following budget without considering the amount of time spent by manpower. This is summarized in the Table 1.

| | Quantity | Price |
|----------------------------|-----------|--------------------|
| Equipment | 1 | € 12,000.00 |
| Calibration patterns | 3 | € 50.00 |
| Silicone moulds | 4 | € 70.00 |
| Crucible DSC | 400 | € 883.20 |
| Crucible TGA | 20 | € 563.00 |
| Nitrogen bottles | 3 | € 455.46 |
| Intracooler liquid | 0.5 L | € 90.70 |
| Epoxy | 500 g | € 52.00 |
| Thiol | 500 mL | € 144.88 |
| Acetone | 5 L | € 48.53 |
| Ethanol | 5 L | € 14.60 |
| Paper | 1 | € 23.52 |
| Protection Gloves | 50 | € 7.30 |
| Watch glass | 2 | € 8.10 |
| Beaker | 2 | € 5.00 |
| Boron Nitride (2 microns) | 1 Kg | € 135.00 |
| Boron Nitride (80 microns) | 1 Kg | € 198.00 |
| Boron Nitride (6 microns) | | Donation |
| SEM | | € 100.00 |
| LC-80 | | Donation |
| Personal | 600 hours | € 4,800.00 |
| Equipment functioning | 230 hours | € 13,800.00 |
| Total | | € 33,449.29 |

Figure 1. Budget of the study

The elements has been divided in two parts in the budget, one containing all the materials required for the correct development of the TFG and for the sample preparations and evaluations, and the other part is specific to this TFG as it is the amount of money that cost during the whole process.

The most expensive part of the TFG has been keeping the equipment functioning for long periods, as the cost per hour of the machines are approximately 60 €/hour, this price includes all the electricity needed for the functioning as well as external things that could be, for example, the maintenance of the equipment.

On the other hand, there has been some items that could not be determined the exactly price as they were donations from other groups and therefore there was no cost assigned.