

Figure 1 shows the graph of temperature against time. Some of the various calculated <sup>1</sup> and recorded values are listed in table 1.

Using the additive model in the graph, I calculated  $c$  as  $0.45 \text{ J g}^{-1} \text{ }^{\circ}\text{C}^{-1}$ .

This value of  $c$  agrees with various other values I've found:

- $c = 0.460 \text{ 548 J g}^{-1} \text{ }^{\circ}\text{C}^{-1}$  [1]
- $c = 0.450 \text{ J g}^{-1} \text{ }^{\circ}\text{C}^{-1}$  [2]
- $c = 0.444 \text{ J g}^{-1} \text{ }^{\circ}\text{C}^{-1}$  [3]

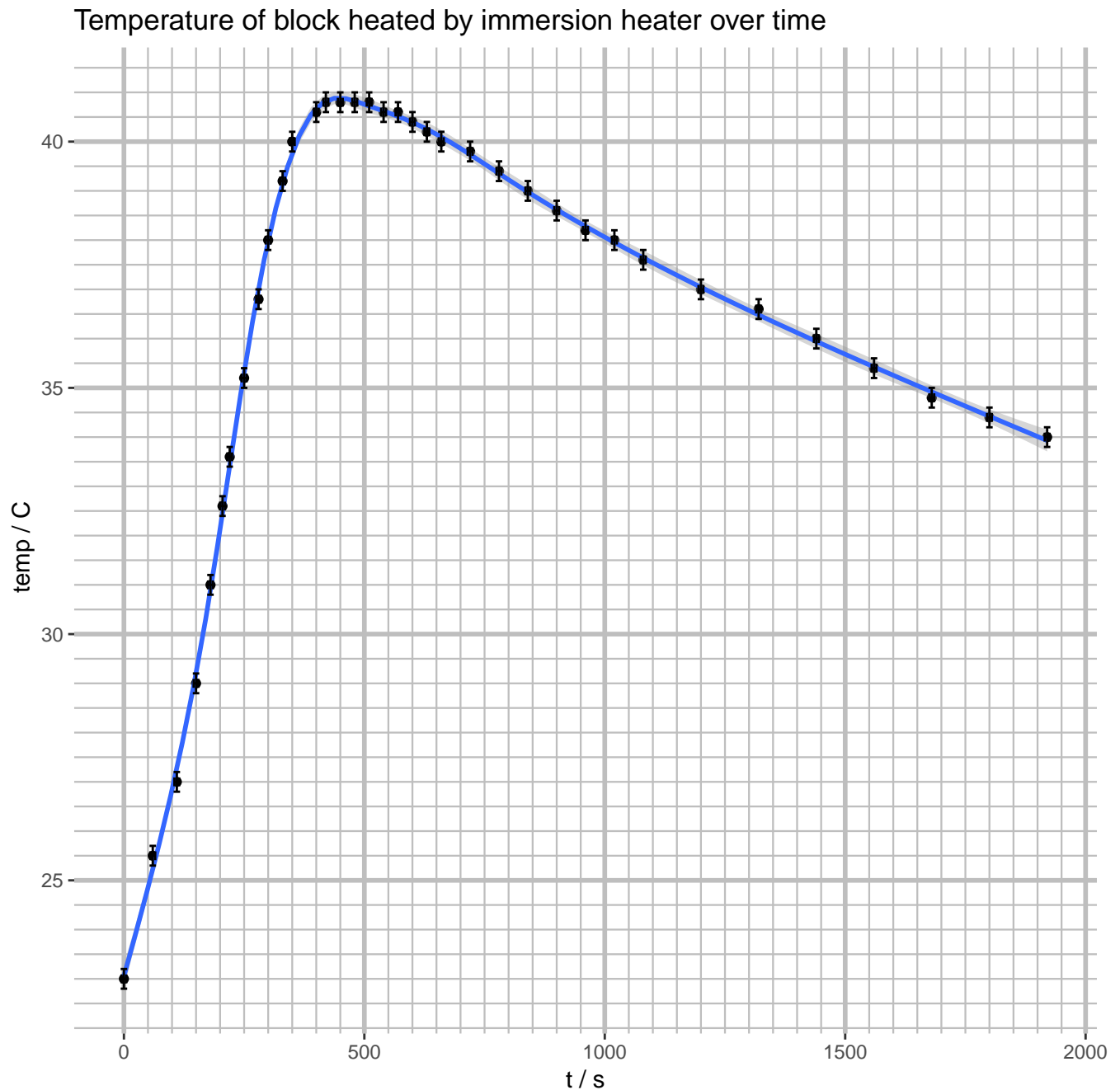


Figure 1: Graph of temperature against time

<sup>1</sup>[https://github.com/elterminad0r/physics/tree/master/thermal\\_cap/analyse.r](https://github.com/elterminad0r/physics/tree/master/thermal_cap/analyse.r)

$t_1$	446.8 s
$t_2$	1473.2 s
$A_1$	4537.0 s °C
$A_2$	21 070.4 s °C
$\theta_{\text{corrected max}}$	42.3 °C
$\theta_{\text{start}}$	23.0 °C
$t_{\text{heat}}$	210.0 s
$c$	0.45 J g <sup>-1</sup> °C <sup>-1</sup>

Table 1: Intermediate values in the calculation of  $c$

## References

- [1] Engineers Edge [2015], ‘Specific heat capacity of metals table’. Retrieved 12/7/18.  
**URL:** [https://www.engineersedge.com/materials/specific-heat-capacity-of-metals\\_13259.htm](https://www.engineersedge.com/materials/specific-heat-capacity-of-metals_13259.htm)
- [2] Leon, N. D. [2015], ‘Indiana university northwest lecture notes’. Retrieved 12/7/18.  
**URL:** <http://www.iun.edu/~cpanhd/C101webnotes/matter-and-energy/specifichat.html>
- [3] Stretton, T. [2014], ‘Chemistry pages databook’. Retrieved 12/7/18.  
**URL:** <http://www2.ucdsb.on.ca/tiss/stretton/database/specific-heat-capacity-table.html>