



City Research Online

City St George's, University of London

Citation: Nasir Bashir, M., Saad, H. M., Rizwan, M., Bingöl, S., Channa, I. A., Gul, M., Haseeb, A. S. M. A. & Naher, S. (2022). Effect of cobalt nanoparticles on mechanical properties of Sn–58Bi solder joint. *Journal of Materials Science: Materials in Electronics*, 33(28), pp. 22573-22579. doi: 10.1007/s10854-022-09035-6

This is the accepted version of the paper.

This version of the publication may differ from the final published version. To cite this item please consult the publisher's version.

Permanent repository link: <https://openaccess.city.ac.uk/id/eprint/31388/>

Link to published version: <https://doi.org/10.1007/s10854-022-09035-6>

Copyright and Reuse: Copyright and Moral Rights remain with the author(s) and/or copyright holders. Copies of full items can be used for personal research or study, educational, or not-for-profit purposes without prior permission or charge, unless otherwise indicated, provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way. For full details of reuse please refer to [City Research Online policy](#).

Table 1 Maximum Tensile Strength at different cobalt concentrations

Percentage of Cobalt (%)	Reaction Time (hours)	Tensile Stress (MPa)
0	0	71.25
	126	64.56
	504	63.04
0.5	0	79.45
	126	67.15
	504	66.07
1	0	84.63
	126	71.03
	504	70.17
2	0	90.02
	126	76.43
	504	74.92

Table 2 Ultimate Tensile Strength at different concentrations of cobalt

Percentage of Cobalt (%)	Ultimate Tensile Strength (MPa)
0	71.25
0.5	79.45
1	84.63
2	90.02