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The Open University

Statement of participation

Tithi Bose

has completed the free course including any mandatory tests for:

Superconductivity

This 12-hour free course gave an overview of superconductors, including their history, their properties and potential for both science and industry.

Issue date: 26 January 2022

www.open.edu/openlearn

This statement does not imply the award of credit points nor the conferment of a University Qualification.
This statement confirms that this free course and all mandatory tests were passed by the learner.

Please go to the course on OpenLearn for full details:
https://www.open.edu/openlearn/science-maths-technology/engineering-technology/superconductivity/content-section-0

COURSE CODE: **SMT359_1**

Superconductivity

https://www.open.edu/openlearn/science-maths-technology/engineering-technology/superconductivity/content-section-0

Course summary

The fascinating phenomenon of superconductivity and its potential applications has attracted the attention of scientists, engineers and businessmen. Intense research has taken place to discover new superconductors, to understand the physics that underlies the properties of superconductors, and to develop new applications for these materials. In this free course you will read about the history of superconductors, taking a brief look at their properties. You will also learn about modelling the properties of superconductors and the two different types of superconductor that exist today.

Learning outcomes

By completing this course, the learner should be able to:

- explain the meanings of the newly defined (emboldened) terms and symbols, and use them appropriately
- distinguish between perfect conduction and perfect diamagnetism, and give a qualitative description of the Meissner effect
- explain how observation of a persistent current can be used to estimate an upper limit on the resistivity of a superconductor, and perform calculations related to such estimates
- explain why the magnetic flux through a superconducting circuit remains constant, and describe applications of this effect
- show how the London equations and Maxwell's equations lead to the prediction of the Meissner effect.

Completed study

The learner has completed the following: