

**De Morgan Medal 2019**  
**Citation for Professor Sir Andrew Wiles FRS**

A De Morgan Medal is awarded to Professor Sir Andrew Wiles FRS of the University of Oxford for his seminal contributions to number theory and for his resolution of ‘Fermat’s Last Theorem’ in particular, as well as for his numerous activities promoting mathematics in general.

Wiles did his PhD with John Coates and immediately attracted attention through their joint work on the conjecture of Birch and Swinnerton-Dyer. This was followed by a proof of the ‘Main Conjecture’ of Iwasawa Theory for cyclotomic fields, in collaboration with Mazur.

However it is his work on the Shimura–Taniyama–Weil conjecture, with its consequences for Fermat’s Theorem, for which he will be forever known. The Shimura–Taniyama–Weil conjecture is a first step in the Langlands Program, a grand vision which seeks to unify and explain a vast panorama of individual arithmetic phenomena, of which only the smallest individual cases are currently understood. In Wiles’ work a technique was developed to resolve the semistable case of the Shimura–Taniyama–Weil conjecture. This case was enough to handle Fermat’s Last Theorem, but within mathematics the opening into the Shimura–Taniyama–Weil conjecture was even more important. Later workers developed Wiles’ methods to establish the conjecture in full, but investigations into further extensions of these ideas within the Langlands programme are still a major industry within the subject.

The publicity associated with his resolution of Fermat’s Last Theorem has put Wiles in a unique position to communicate the excitement of mathematics to students of all ages, and to society in general. He has given a large number of public talks, which are invariably ‘sold out’, and has reached an enormous audience across the globe.