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After the war, Turing worked at the [National Physical Laboratory](#), where he designed the [Automatic Computing Engine](#), which was one of the first designs for a stored-program computer. In 1948, Turing joined [Max Newman's Computing Machine Laboratory](#) at the [Victoria University of Manchester](#), where he helped develop the [Manchester computers](#)^[15] and became interested in [mathematical biology](#). He wrote a paper on the chemical basis of [morphogenesis](#)^[1] and predicted [oscillating chemical reactions](#) such as the [Belousov–Zhabotinsky reaction](#), first observed in the 1960s.

Turing was prosecuted in 1952 for homosexual acts; the [Labouchere Amendment](#) of 1885 had mandated that "gross indecency" was a criminal offence in the UK. He accepted [chemical castration](#) treatment, with [DES](#), as an alternative to prison. Turing died in 1954, 16 days before his 42nd birthday, from [cyanide poisoning](#). An inquest determined his death as a suicide, but it has been noted that the known evidence is also consistent with accidental poisoning.

In 2009, following an [Internet campaign](#), British Prime Minister [Gordon Brown](#) made an [official public apology](#) on behalf of the British government for "the appalling way he was treated". [Queen Elizabeth II](#) granted Turing a posthumous pardon in 2013. The [Alan Turing law](#) is now an informal term for a 2017 law in the United Kingdom that retroactively pardoned men cautioned or convicted under historical legislation that outlawed homosexual acts.^[16]

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