

Atomic energy or energy of atoms is energy carried by atoms. The term originated in 1903 when Ernest Rutherford began to speak of the possibility of atomic energy. H. G. Wells popularized the phrase "splitting the atom", before discovery of the atomic nucleus.¹

Atomic energy includes:

Nuclear binding energy, the energy required to split a nucleus of an atom.

Nuclear potential energy, the potential energy of the particles inside an atomic nucleus.

Nuclear reaction, a process in which nuclei or nuclear particles interact, resulting in products different from the initial ones; see also nuclear fission and nuclear fusion.

Radioactive decay, the set of various processes by which unstable atomic nuclei (nuclides) emit subatomic particles.

The energy of inter-atomic or chemical bonds, which holds atoms together in compounds.

Atomic energy is the source of nuclear power, which uses sustained nuclear fission to generate heat and electricity. It is also the source of the explosive force of an atomic bomb.

In the present book, ten typical literatures about atomic energy published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on atomic energy. We hope this book can demonstrate advances in atomic energy as well as give references to the researchers, students and other related people.

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¹https://en.wikipedia.org/wiki/Atomic_energy