CLAIMS

1. A magnetic field generating apparatus operating in conjunction with a radiation treatment device for treating affected tissue of a subject by using photon beam radiation, the apparatus comprising:

a magnetic field generating unit configured to form a magnetic field inside the subject; and

a synchronization control unit configured to synchronize a radiation pulse corresponding to the photon beam radiation with a magnetic field pulse corresponding to the magnetic field;

wherein the synchronization control unit sets a magnetic field generation time range such that a secondary electron generation section generated due to irradiation of the photon beam radiation is included in the magnetic field generation time range after the magnetic field reaches a target value.

2. The apparatus of claim 1, wherein the synchronization control unit operates in conjunction with a radiation amount control unit of the radiation treatment device, and

wherein the synchronization control unit receives an output period of the photon beam radiation from the radiation amount control unit and synchronizes an output period of the photon beam radiation with an output period of the magnetic field.

3. The apparatus of claim 1, further comprising:

a pulse detection unit configured to detect the photon beam radiation,

wherein the synchronization control unit obtains an output period of the photon beam radiation by analyzing the detected photon beam radiation.

4. The apparatus of claim 1, wherein the synchronization control unit sets a magnetic field generation time range in consideration of a delay time required until the magnetic field reaches a target value.

5. The apparatus of claim 1, wherein the subject further comprises a normal tissue and one of a low-density tissue and a low density region introduced into the subject that is adjacent to at least one of the affected tissue and the normal tissue, and

wherein the magnetic field generating unit forms the magnetic field in one of the low-density tissue and the low density region.

6. The apparatus of claim 1, wherein the magnetic field generating unit includes an electromagnet, a permanent magnet, and a combination of the electromagnet and the permanent magnet, and

wherein the magnetic field generating unit rotates around the subject, or is positioned along a periphery of the subject in a fixed or floating manner.

7. The apparatus of claim 1, wherein the magnetic field generating unit includes a plurality of electromagnets, a plurality of permanent magnets, or a

combination of the plurality of electromagnets and the plurality of permanent magnets, which are arranged in a left-right symmetrical structure, based on an axis on which the radiation is irradiated.

8. The apparatus of claim 7, further comprising:

a plate-shaped frame in which the subject is seated and in which the electromagnets, the permanent magnets, or the combination are positioned,

wherein the plate-shaped frame includes a space in which the electromagnets, the permanent magnets, or the combination moves.

9. A radiation treatment device operating in conjunction with a magnetic field generating apparatus of claim 1 and including a radiation generating unit configured to irradiate radiation to the affected tissue of the subject.