What is claimed is:

1. A laser processing apparatus comprising:

a first laser mechanism including a first chuck table for holding a first workpiece, first X moving means for moving said first chuck table in an X direction, first Y moving means for moving said first chuck table in a Y direction perpendicular to said X direction, and first focusing means for focusing a first laser beam to said first workpiece held on said first chuck table;

a second laser mechanism including a second chuck table for holding a second workpiece, second X moving means for moving said second chuck table in said X direction, second Y moving means for moving said second chuck table in said Y direction, and second focusing means for focusing a second laser beam to said second workpiece held on said second chuck table;

a pulsed laser oscillator;

a beam splitter for branching an original laser beam oscillated by said laser oscillator into said first laser beam and said second laser beam and leading said first and second laser beams to said first and second focusing means, respectively, wherein said beam splitter comprises a polarization beam splitter, and thus said first laser beam comprises S polarized light and said second laser beam comprises P polarized light;

a half-wave plate interposed between said pulsed laser oscillator and said polarization beam splitter, wherein said half-wave plate is configured and arranged for adjusting a ratio of intensity between the S polarized light and the P polarized light;

a first operation panel for setting first processing conditions for said first laser mechanism; and

a second operation panel for setting second processing conditions for said second laser mechanism,

wherein said first laser mechanism and said second laser mechanism are configured and arranged to be operated independently.

2. The laser processing apparatus according to claim 1, further comprising:

a housing for covering said first laser mechanism and said second laser mechanism;

said housing being provided with a first door at a position where said first workpiece is loaded to said first laser mechanism and a second door at a position where said second workpiece is loaded to said second laser mechanism;

said first and second operation panels being mounted on said first and second doors, respectively;

said first door and said second door being arranged in parallel in said Y direction on a plane perpendicular to said X direction.

3. The laser processing apparatus according to claim 2, wherein:

said first chuck table is moved by said first X moving means between a first standby area where said first workpiece is held or unheld with respect to said first chuck table and a first processing area where said first laser beam is applied from said first focusing means to said first workpiece held on said first chuck table;

said first standby area including a first cassette table for mounting a first cassette storing said first workpiece, first temporary setting means for temporarily setting said first workpiece, first handling means for taking said first workpiece out of said first cassette mounted on said first cassette table and then carrying said first workpiece to said first temporary setting means, and first transfer means for transferring said first workpiece from said first temporary setting means to said first chuck table;

said first door being opened in loading/unloading said first cassette to/from said first cassette table; and said

second chuck table is moved by said second X moving means between a second standby area where said second workpiece is held or unheld with respect to said second chuck table and a second processing area where said second laser beam is applied from said second focusing means to said second workpiece held on said second chuck table;

said second standby area including a second cassette table for mounting a second cassette storing said second workpiece, second temporary setting means for temporarily setting said second workpiece, second handling means for taking said second workpiece out of said second cassette mounted on said second cassette table and then carrying said second workpiece to said second temporary setting means, and second transfer means for transferring said second workpiece from said second temporary setting means to said second chuck table;

said second door being opened in loading/unloading said second cassette to/from said second cassette table.

4. The laser processing apparatus of claim 1, further comprising:

a first beam shutter provided in the optical path of the first laser beam; and

a second beam shutter provided in the optical path of the second laser beam.

5. The laser processing apparatus according to claim 4, wherein said first and second beam shutters are configured and arranged such that said first and second laser mechanisms can be operated in any one of the three following modes:

a first mode in which only said first laser beam is applied to the first workpiece, and said second laser beam is not applied to the second workpiece;

a second mode in which only said second laser beam is applied to the second workpiece, and said first laser beam is not applied to the first workpiece; and

a third mode in which said first laser beam is applied to the first workpiece and said second laser beam is applied to the second workpiece.

6. The laser processing apparatus according to claim 1, wherein said first and second laser mechanisms are configured and arranged to be operated in any one of the three following modes:

a first mode in which only said first laser beam is applied to the first workpiece, and said second laser beam is not applied to the second workpiece;

a second mode in which only said second laser beam is applied to the second workpiece, and said first laser beam is not applied to the first workpiece; and

a third mode in which said first laser beam is applied to the first workpiece and said second laser beam is applied to the second workpiece.

7. The laser processing apparatus according to claim 1, wherein said pulsed laser oscillator oscillates a laser beam having a wavelength of 1064 nm.

8. The laser processing apparatus according to claim 1, further comprising:

a first attenuator provided on said first laser beam between said polarization beam splitter and said first focusing means; and

a second attenuator provided on said second laser beam between said polarization beam splitter and said second focusing means.

9. The laser processing apparatus according to claim 1, further comprising:

a first wavelength setting means provided on said first laser beam between said polarization beam splitter and said first focusing means; and

a second wavelength setting means provided on said second laser beam between said polarization beam splitter and said second focusing means.