

CLAIMS:

1. An apparatus (1) for preparing brewed beverages, comprising a brewing chamber (6), on which an inlet is provided for heated water and an outlet (22) for the brewed beverage, wherein the brewing chamber (6) has an opening (20) on which a capsule (15) can be arranged with substances effective for the brewing operation, the capsule having a capsule opening (12) which is connected at least in part to the brewing chamber (6) and a base (18) opposite the capsule opening (12), characterized in that at least one light source (40) is provided adjacent to the base (18) of the capsule (15), which light source emits light into the base (18) via an inlet surface (41), wherein at least one light conductor (45) is provided in the base (18), by means of which the light emitted into the base (18) is conducted to at least one light-output surface (44) on the base (18) of the capsule (15), and a light detector (36) is arranged opposite the at least one light-output surface (44).
2. An apparatus according to claim 1, characterized in that several light conductors (45) are provided in the base (18), by means of which light can be conducted from an inlet surface (41) to a light-output surface (44) on the base (18) of the capsule (15).
3. An apparatus according to claim 2, characterized in that a light deflection apparatus (42, 43) is provided in the base (18) of the capsule (15) adjacent to an inlet surface (41) and/or a light-output surface (44), by means of which the light of the light source (40) is introduced into a light conductor (45) or is emitted by the light conductor (45) to the light-output surface (44).
4. An apparatus according to one of the preceding claims, characterized in that a first light deflection apparatus (42) is provided in each light conductor (45) after the inlet surface (41) and a further second light deflection apparatus (43) is provided before the light-output surface (44) in order to emit the light from the light conductor (45) to at least one light detector (36).

5. An apparatus according to claim 4, characterized in that the light is emitted to the light detectors (36) substantially perpendicularly to a plane of the base (18).
6. An apparatus according to one of the preceding claims, characterized in that the capsule (15) comprises four light conductors (45) which each lead from a common inlet surface (41) to a light-output surface (44).
7. An apparatus according to one of the preceding claims, characterized in that the capsule (15) comprises four light conductors (45) which each lead from a light injection surface (44) to a common light-output surface (41).
8. An apparatus according to one of the preceding claims, characterized in that a positioning device (19) is provided which interacts with a positioning means of the capsule (15) in order to arrange the capsule (15) in a predetermined position and orientation on the brewing chamber (6).
9. An apparatus according to one of the preceding claims, characterized in that a controller is provided, which on the basis of the information of the light detectors (36) controls at least the brewing time and the temperature of the water introduced into the brewing chamber (6).
10. A capsule (15) for an apparatus (1) according to one of the preceding claims.
11. A capsule according to claim 10, characterized in that the capsule (15) has reduced transparency on at least one inlet surface (41) and/or one light-output surface (44).
12. A capsule according to claim 11, characterized in that the transparency is reduced by a coating (48), a label or a mechanical, thermal or chemical change to the surface of the light-output surface (44), or a light-refractive element in the light conductor (45).
13. A capsule according to claim 10 or 11, characterized in that the capsule (15) is formed in a substantially cup-shaped manner and the capsule opening (12) is

sealed in a liquid-permeable manner by a screen (31) or a filter element.

14. A capsule system for an apparatus (1) according to one of the claims 1 to 8, comprising several capsules (15) which are formed in different ways on the light-output surfaces or inlet surfaces (44).
15. A method for preparing a brewed beverage, comprising the following steps:
 - inserting a capsule (15) into an insertion chute (7) and arranging the capsule (15) adjacent to a brewing chamber (6);
 - reading out a coding on the capsule (50), wherein at least one light source (40) which emits light into the base (18) is provided adjacent to a base (18) of the capsule (15), wherein at least one light conductor (45) is provided in the base (18), by means of which the light emitted into the base (18) is conducted to at least one light-output surface (44) on the base (18) of the capsule (15), and a light detector (36) for reading out the coding is arranged opposite the at least one light-output surface (44);
 - filling hot water into the brewing chamber (6) for preparing a brewed beverage depending on the read coding.
16. A method for preparing a brewed beverage according to claim 15, characterized in that several light sources (40) are provided, which after the arrangement of the capsule (15) adjacent to the brewing chamber (6) successively emit light at different points into the base (18) and the emitted light is conducted to and detected by a single light detector.