conditions); and / or optionally comprises a sparge (e.g., gas introduction device). The holder may comprise a receiving implement (e.g., one or more tracks) with which the mobile carriage assembly may be inserted into and optionally affixed to the holder; may maintain the desired geometry (e.g., shape) of the disposable reaction container, optionally including reaction container anti-swirl baffles; may provide for heating and / or cooling of the reaction components within the reaction container; comprises a door for maintaining the mobile carriage assembly and reaction container separated from the exterior of the holder (e.g., locking the carriage / reaction container within the holder); and / or comprises one or more anti-swirl and / or heat exchange baffle(s). The reactor system may be used to carry out reaction involving, for example, a chemical process, a pharmaceutical process, and a biological process. For instance, a biological process may be a microbiological culture, mammalian cell culture, and plant cell culture. In some embodiments, the reaction may be use in at least one step of a process for the production of a composition comprising a peptide, protein, nucleic acid, complex thereof, combination thereof, or the like for use in, for example, for the prevention and / or treatment of a disease (e.g., as a vaccine). Methods for carrying out these reactions are also provided. It is noted that the terms "attached", "fixably attached", "affixed", and / or "adjoined" mean that at least two materials are linked or bonded to one another in a temporary or permanent (or substantially permanent) manner. And parts are "reversibly" attached where one part may be attached and detached from another part. For example, one of ordinary skill in the art would understand that the at least one implement providing for fixably attaching the disposable reaction container to the mobile carriage assembly may also provide for removal of the disposable reaction container from the carriage. Similarly, the at least one implement providing for fixably attaching the mobile carriage assembly to the holder may also provide for removal of the mobile carriage assembly from the holder. The mobile carriage assembly and diposable reaction container may be of any suitable size, as long as the components are compatible with one another.

Figure 1 illustrates an exemplary mobile carriage assembly ~~assembly~~. As briefly described above, the mobile carriage assembly ~~assembly~~ may comprise a mobility implement, such as wheels **(1)** or tracks. The mobile carriage assembly may also comprise a set of primary and secondary mobility implements (**1a, 1b**). The primary

CLAIMS

What is claimed is:

1. A reactor system comprising:
    a. a mobile carriage assembly comprising:
        i) a carriage platform;
        ii) at least one primary mobility implement and at least one secondary mobility implement;
        iii) a shaft and impellar assembly attached to the carriage platform;
    b. a disposable reaction container removably attached to the carriage platform; and,
    c. a mobile carriage assembly holder into which the mobile carriage assembly may be removably inserted, the holder comprising a receiving implement;

    wherein:

    the mobile carriage assembly is removably inserted into and removed from the holder using the secondary mobility implement of the mobile carriage assembly and the receiving implement of the holder; and,

    the secondary mobility implement comprises implements proximal to and distal from the receiving implement in the pre-assembled position.

2. The reactor system of claim 1 wherein the carriage holder comprises a heat transfer jacket.

3. The reactor system of claim 1 or 2 wherein the mobile carriage assembly further comprises an implement for mixing the components of the reaction.

4. The reactor system of claim 1 wherein the disposable reaction container:
    a. comprises a sterile, sealable interior chamber in which reaction components may be reacted with one another;
    b. may be removed from the mobile carriage assembly after the reaction is complete;
    c. separates the contents of the reaction separated from the external environment after removal from the mobile carriage assembly; and / or,
    d. comprises a sparge.

5. The reactor system of any one of claims 1-4 wherein the holder:

i. comprises a receiving implement with which the mobile carriage assembly may be inserted into and optionally affixed to, and removed from, the holder;
ii. maintains the desired geometry of the disposable reaction container, optionally including reaction container anti-swirl baffles;
iii. provides for heating and / or cooling of the reaction components within the reaction container;
iv. comprises a door for maintaining the reaction container separated from the exterior of the holder; and / or,
v. comprises one or more anti-swirl and / or heat exchange baffles.

6. The reactor system of claim 5 wherein the receiving implement comprises one or more wheels and / or tracks.

7. The reactor system of any one of claims 1-5 wherein the reaction is selected from the group consisting of a chemical process, a pharmaceutical process, and a biological process.

8. The reactor system of claim 7 wherein the biological process is selected from the group consisting of microbiological culture, mammalian cell culture, and plant cell culture.

9. The reactor system of claim 7 wherein the reaction is at least one step of a process for the production of a composition comprising a peptide, protein, nucleic acid, complex thereof, or combination thereof.

10. The reactor system of any one of claims 1-9 wherein the holder comprises one or more vertical seams at which the holder may be opened and / or closed and further comprises one or more vertical hinges.

11. The reactor system of claim 10 wherein the one or more vertical hinges are positioned approximately opposite the one or more vertical seams.

12. A method for carrying out a reaction using a reactor system of any one of claims 1-11.

13. The method of claim 12 wherein the reaction is selected from the group consisting of a chemical process, a pharmaceutical process, and a biological process.

14. The method of claim 13 wherein the biological process is selected from the group consisting of microbiological culture, mammalian cell culture, and plant cell culture.

15. The method of claim 12 wherein the reaction is at least one step of a process for the production of a composition comprising a peptide, protein, nucleic acid, complex thereof, or combination thereof.

16. A reaction product produced using a reactor system of any one of claim 1-11.

17. A reaction product produced using a method of any one of claim 12-15.

18. A mobile carriage assembly to which a disposable reaction container may be removably attached, the mobile carriage assembly comprising at least one primary mobility implement for moving the carriage assembly and at least one secondary mobility implement comprising implements proximal to and distal from the receiving implement in the pre-assembled position for removably inserting the mobile carriage assembly into a holder, and an implement for mixing the components of the reaction in the reaction container.

19. The reactor system of claim 1 wherein the primary mobility implement comprises one or more wheels or tracks.

20. The reactor system of claim 19 wherein the primary mobility implement comprises one or more wheels.

21. The reactor system of claim 1 wherein the secondary mobility implement comprises one or more wheels or tracks.

22. The reactor system of claim 21 wherein the primary mobility implement comprises one or more wheels.

23. The reactor system of claim 1 wherein each of the primary mobility implement and the secondary mobility implement comprises one or more wheels.

24. The reactor system of claim 1 wherein the receiving implement comprises one or more wheels or tracks.

25. The reactor system of claim 24 wherein the receiving implement comprises one or more tracks.

26. The mobile carriage assembly of claim 18 wherein the primary mobility implement comprises one or more wheels or tracks.

27. The mobile carriage assembly of claim 26 wherein the primary mobility implement comprises one or more wheels.

28. The mobile carriage assembly of claim 18 wherein the secondary mobility implement comprises one or more wheels or tracks.

29. The mobile carriage assembly of claim 28 wherein the primary mobility implement comprises one or more wheels.

30. The reactor system of claim 19 wherein each of the primary mobility implement and the secondary mobility implement comprises one or more wheels.

CLAIMS

What is claimed is:

1. A reactor system comprising:
    a. a mobile carriage assembly;
    b. a disposable reaction container removably attached to the carriage assembly; and,
    c. a mobile carriage assembly holder into which the mobile carriage assembly may be removably inserted.

2. The reactor system of claim 1 wherein the carriage holder comprises a heat transfer jacket.

3. The reactor system of claim 1 or 2 wherein the mobile carriage assembly comprises at least one implement selected from the group consisting of at least one wheel or track, an implement providing for fixably attaching the disposable reaction container to the mobile carriage assembly, an implement providing for fixably attaching the carriage to the holder, and an implement for mixing the components of the reaction.

4. The reactor system of claim 3 wherein the implement for mixing the components of the reaction is an agitator that optionally comprises a shaft and impellar fixably attached to the carriage.

5. The reactor system of any one of claims 1-4 wherein the disposable reaction container:
    a. comprises a sterile, sealable interior chamber in which reaction components may be reacted with one another;
    b. may be reversibly fixably attached to the mobile carriage assembly;
    c. may be removed from the mobile carriage assembly after the reaction is complete;
    d. separates the contents of the reaction separated from the external environment after removal from the mobile carriage assembly; and / or,
    e. comprises a sparge.

6. The reactor system of any one of claims 1-5 wherein the holder:
    i. comprises an receiving implement with which the mobile carriage assembly may be inserted into and optionally affixed to, and removed from, the holder;
    ii. maintains the desired geometry of the disposable reaction container, optionally including reaction container anti-swirl baffles;
    iii. provides for heating and / or cooling of the reaction components within the reaction container;
    iv. comprises a door for maintaining the reaction container separated from the exterior of the holder; and / or,
    v. comprises one or more anti-swirl and / or heat exchange baffles.

7. The reactor system of claim 6 wherein the receiving implement comprises one or more wheels and / or tracks.

8. The reactor system of any one of claims 1-7 wherein the reaction is selected from the group consisting of a chemical process, a pharmaceutical process, and a biological process.

9. The reactor system of claim 8 wherein the biological process is selected from the group consisting of microbiological culture, mammalian cell culture, and plant cell culture.

10. The reactor system of claim 8 wherein the reaction is at least one step of a process for the production of a composition comprising a peptide, protein, nucleic acid, complex thereof, combination thereof.

11. The reactor system of any one of claims 1-10 wherein the holder comprises one or more vertical seams at which the holder may be opened and / or closed and further comprises one or more vertical hinges.

12. The reactor system of claim 11 wherein the one or more vertical hinges are positioned approximately opposite the one or more vertical seams.

13. A method for carrying out a reaction using a reactor system of any one of claims 1-12.

14. The method of claim 13 wherein the reaction is selected from the group consisting of a chemical process, a pharmaceutical process, and a biological process.

15. The method of claim 14 wherein the biological process is selected from the group consisting of microbiological culture, mammalian cell culture, and plant cell culture.

16. The method of claim 13 wherein the reaction is at least one step of a process for the production of a composition comprising a peptide, protein, nucleic acid, complex thereof, combination thereof.

17. A reaction product produced using a reactor system of any one of claims 1-12.

18. A reaction product produced using a method of any one of claims 13-16.

19. A mobile carriage assembly to which a disposable reaction container may be removably attached, the mobile carriage assembly comprising at least one wheel and / or track and an implement for mixing the components of the reaction in the reaction container.