## SUMMARY OF THE DISCLOSURE

**[0007]** This summary is provided to introduce a selection of concepts in a simplified form. These concepts are described in further detail in the detailed description of example embodiments of the disclosure below. This summary is not intended to necessarily identify key features or essential features of the claimed subject matter, nor is it intended to be used to limit the scope of the claimed subject matter.

**[0008]** The present disclosure is generally directed to a solid source precursor delivery system. More specifically, the present disclosure is directed to a solid source precursor vessel that is utilized to vaporize a supply of solid precursor stored within the vessel. The disclosed source vessel replaces a single serpentine channel used to store a supply of precursor and direct a carrier gas through the vessel with a plurality of individual cavities or pockets within the interior of the vessel. Each individual pocket may be loaded with precursor. In an arrangement, the pockets may be loaded with pre-formed blocks of compressed precursor that typically have a higher density than may be achieved when packing a powdered precursor in a serpentine channel. The increased density of the solid precursor material increases a capacity of the source vessel, resulting in longer intervals between replacement and/or refilling the source vessel.

**[0008A]** According to a first aspect of the present disclosure, there is provided a reactant source vessel comprising:

a container body having an outer sidewall and a bottom surface that define an internal area of the container body;

a plurality of pockets disposed within the internal area of the container body, each of the plurality of pockets configured to contain a volume of a solid source precursor;

a lid configured to engage the container body, the lid enclosing the internal area of the container body when connected to the container body;

a fluid flow path within the internal area of the container body, the fluid flow path being formed above the plurality of pockets and below a bottom surface of the lid, the fluid flow path extending between an inlet end and an outlet end along a path the passes over at least a portion of each of the plurality of pockets.

**[0008B]** According to a second aspect of the present disclosure, there is provided a reactant source vessel comprising:

a container body having outer sidewalls and a bottom surface that define an internal area of the container body;

a first plurality of parallel dividing walls extending between a first set of opposing sidewalls of the container body; and

a second plurality of parallel dividing walls extending between a second set of opposing sidewalls of the container body, wherein the first and second plurality of dividing walls intersect to define a matrix of pockets within the internal area of the container body, each of the matrix of pockets configured to contain a volume of a solid source precursor;

a lid having configured to engage the container body, the lid enclosing the internal area of the container body when connected to the container body;

a fluid flow path defined by a bottom surface of the lid, the outer sidewall of the container and the first and second plurality of dividing walls, wherein the fluid flow path extends between an inlet end and an outlet end and passes over an upper surface of each of the matrix of pockets.

**[0008C]** According to a third aspect of the present disclosure, there is provided a method for use with a reactant source vessel comprising:

accessing an interior area of a container body of the reactant source vessel, wherein the interior area includes a plurality of individual pockets;

inserting preformed blocks of compressed solid precursor into each of the plurality of individual pockets;

attaching a lid to the container body to enclose the interior area;

in conjunction with elevating a temperature of the reactant source vessel, directing a carrier gas through a flow path extending through the interior area of the reactant source vessel between a flow path inlet end and a flow path outlet end, wherein the carrier gas removes vaporized precursor from the vessel.

**[0009]** In an arrangement, a reactant source vessel is provided that includes a container body and a lid. The lid is configured to attach to the container body to enclose an internal area of the container body defined by one or more sidewalls and a bottom surface. Formed within the internal area of the container body are a plurality of individual pockets that are each configured to hold a volume of solid source precursor. In an arrangement, the pockets may be of a uniform size (e.g., have common dimensions). The individual pockets may have any configuration. For instance, the pockets may be cylindrical, rectangular prismatic, etc. Generally,