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(54) Title: ENHANCED ADSORBENT AND ROOM TEMPERATURE CATALYST PARTICLE AND METHOD OF MAKING AND USING THEREFOR


(57) Abstract

A method for producing an enhanced adsorbent and/or enhanced catalytic particle and/or for producing a catalytic particle, comprising the steps of: (a) removing an effective amount of air from a closed chamber containing an adsorbent and/or catalytic particle, wherein the resultant chamber pressure is less than one atmosphere; (b) raising the chamber pressure with an inert gas to at least one atmosphere; (c) contacting the particle with an energy beam of sufficient energy for a sufficient time to thereby enhance the adsorbent and/or catalytic properties of the particle and/or produce catalytic properties in the particle. A continuous process directed to step (c) alone is also provided. Also disclosed are adsorbent and/or catalytic particles, methods of contaminant reduction or elimination, including room temperature catalysis, particle binders, apparatuses of the present invention, and methods of increasing the surface area of adsorbent and/or catalytic particles.


