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(54) Title (EN): METHOD OF FORMING A CARBON DIOXIDE ADSORBENT FOR A REBREATHING APPARATUS OR OTHER BREATHING APPARATUS

(54) Title (FR): PROCÉDÉ DE FORMATION D'UN ADSORBANT DE DIOXYDE DE CARBONE POUR UN APPAREIL DE RESPIRATION À CIRCUIT FERMÉ OU UN AUTRE APPAREIL RESPIRATOIRE

(57) Abstract:

(EN): A method of forming a carbon dioxide adsorbent of a rebreather apparatus for removing carbon dioxide from an individual user's breathing gas, the method comprising: preparing a SIFSIX-3-Ni paste comprising a mixture of SIFSIX-3-Ni material and a solvent, the SIFSIX-3-Ni material substantially comprising 2- dimensional SIFSIX-3-Ni structure; forming the SIFSIX-3-Ni paste into a shaped body having at least one mean dimension of greater than 0.5 mm; and heat treating the shaped body in a reduced pressure environment comprising a pressure of less than 500 mbar at a temperature of at most 160 °C to substantially remove the solvent from the shaped body and form 3-dimensional SIFSIX-3-Ni crystal structure in the shaped body, thereby producing a shaped adsorbent body for use in a rebreather apparatus.

(FR): Un procédé de formation d'un adsorbant de dioxyde de carbone d'un appareil de respiration à circuit fermé pour éliminer le dioxyde de carbone d'un mélange respiratoire d'un utilisateur individuel, le procédé comprenant : la préparation d'une pâte SIFSIX-3-Ni comprenant un mélange de matériau SIFSIX-3-Ni et un solvant, le matériau SIFSIX-3-Ni comprenant essentiellement une structure SIFSIX-3-Ni bidimensionnelle; la formation de la pâte SIFSIX-3-Ni dans un corps façonné ayant au moins une dimension moyenne supérieure à 0,5 mm; et le traitement thermique du corps façonné dans un environnement à pression réduite comprenant une pression inférieure à 500 mbar à une température maximale de 160 °C pour éliminer substantiellement le solvant

du corps façonné et former une structure cristalline SIFSIX-3-Ni tridimensionnelle dans le corps façonné, ce qui permet de produire un corps adsorbant façonné destiné à être utilisé dans un appareil de respiration à circuit fermé.

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