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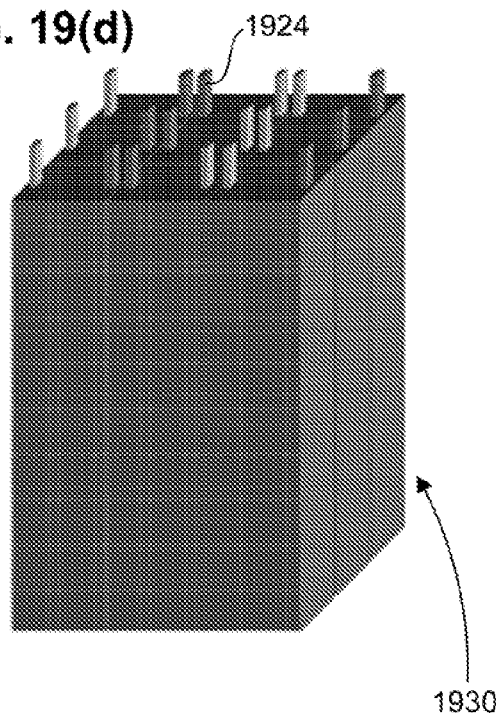
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[Continued on next page]

(54) **Title:** SOLID-STATE LI-S BATTERIES AND METHODS OF MAKING SAME

FIG. 19(d)



(57) **Abstract:** Disclosed is a method of fabricating a battery or battery component having a solid state electrolyte. A scaffold is provided, the scaffold comprising: a dense central layer comprising a dense electrolyte material, the dense central layer having a first surface, and a second surface opposite the first surface; a first porous layer comprising a first porous electrolyte material, the first porous layer disposed on the first surface of the dense central layer, the porous electrolyte material having a first network of pores therein; wherein each of the dense electrolyte material and the first porous electrolyte material are independently selected from garnet materials. Carbon is infiltrated into the first porous layer. Sulfur is also infiltrated into the first porous layer. The battery component may be used in a variety of battery configurations.



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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

See Search History Document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

See Search History Document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

See Search History Document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 2014/0287305 A1 (Wachsman et al.) 25 September 2014 (25.09.2014) Abstract, para [0004], para [0010], para [0005], para [0007], para [0035], para [0028], para [0047], para [0008], para [0031], Figure 3 Table 1 and entire document	1-20,29-32 ----- 21-28
Y	US 2012/0264017 A1 (Nazri et al.) 18 October 2012 (18.10.2012) Abstract, para [0026], para [0007], para [0027], para [0028], para [0023], para [0025]	21-28
Y	US 2014/0223730 A1 (Tech. Univ. Denmark) 14 August 2014 (14.08.2014) para [0033]-[0041]	1-32
Y	US 2014/0170465 A1 (Polyplus battery Company) 19 June 2014 (19.06.2014) Abstract, Para [0014]-[0021]	1-32
Y	US 2008/0286625 A1 (Sarkar et al.) 20 November 2008 (20.11.2008) Abstract, Fig 13b, para [0015]-[0023]	1-32
Y	US 2006/0269813 A1 (Seabaugh et al.) 30 November 2006 (30.11.2006) Abstract, para [0012]-[0032]	1-32
Y	Hanifi et al.; "Porous electrolyte-supported tubular micro-SOFC design", Solid State Ionics vol. 192, pp 368-371; 16 August 2010 (16.08.2010) Abstract,	1-32

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