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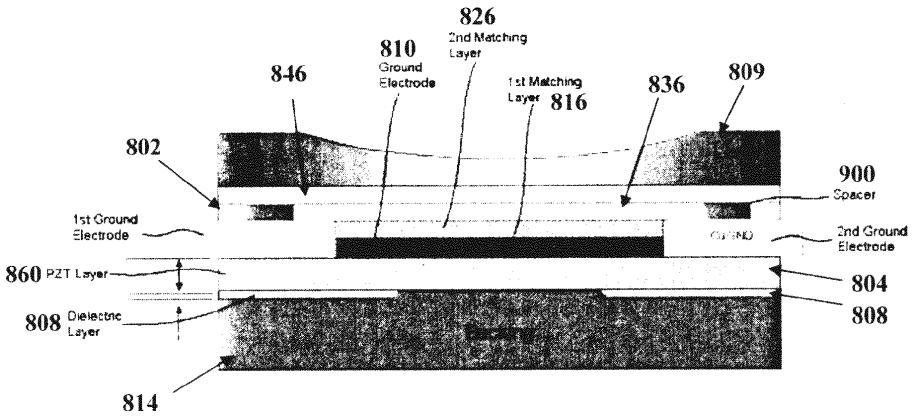
(54) ULTRASOUND TRANSDUCERS

(57) The invention features methods for the manufacture of electrical components such as ultrasound transducers. In particular, the invention provides methods of patterning electrodes, e.g., in the connection of an ultrasound transducer to an electrical circuit; methods of depositing metal on surfaces; and methods of making integrated matching layers for an ultrasound transducer. The invention also features ultrasound transducers produced by the methods described herein.

Figure 1



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EUROPEAN SEARCH REPORT

Application Number
EP 16 18 5029

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 2002/129477 A1 (BUREAU JEAN-MARC [FR] ET AL) 19 September 2002 (2002-09-19) * paragraph [0009] - paragraph [0010] * * paragraph [0032] - paragraph [0039]; figure 4 *	1-6,13	INV. H01L21/64 H04R17/00 H04R31/00 H01L21/768 H01L41/047
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Y	US 2007/182287 A1 (LUKACS MARC [CA] ET AL) 9 August 2007 (2007-08-09) * paragraph [0018] - paragraph [0053] *	2,3,5-15	
Y	US 5 841 075 A (HANSON DAVID A [US]) 24 November 1998 (1998-11-24) * column 22, line 1 - line 26 *	4	TECHNICAL FIELDS SEARCHED (IPC) B06B G01S A61B H01L
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	19 January 2017	Breccia, Luca

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
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EUROPEAN SEARCH REPORT

Application Number
EP 16 18 5029

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 5 091 893 A (SMITH LOWELL S [US] ET AL) 25 February 1992 (1992-02-25) * column 8, line 27 - column 11, line 48 * * figures 5-8 * -----	1-6	

TECHNICAL FIELDS SEARCHED (IPC)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	19 January 2017	Breccia, Luca

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-6

   Ultrasound transducer including a composite dielectric material comprising a matrix and a particulate material.

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2. claims: 7-15

   High-frequency ultrasound transducer including a number of matching layers positioned between a lens and a conductive ground layer.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 16 18 5029

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	超声换能器		
公开(公告)号	EP3121844A3	公开(公告)日	2017-03-08
申请号	EP2016185029	申请日	2009-09-18
[标]申请(专利权)人(译)	富士胶片索诺声公司		
申请(专利权)人(译)	FUJIFILM SONOSITE，INC.		
当前申请(专利权)人(译)	FUJIFILM SONOSITE，INC.		
[标]发明人	LUKACS MARC CHAGGARES CHRIS HIRSON DESMOND PANG GUOFENG		
发明人	LUKACS, MARC CHAGGARES, CHRIS HIRSON, DESMOND PANG, GUOFENG		
IPC分类号	H01L21/64 H04R17/00 H04R31/00 H01L21/768 H01L41/047 B06B1/06 A61B8/13 A61B8/14 A61B8/00 H01L41/29		
CPC分类号	B06B1/0622 H01L41/29 Y10T29/42 Y10T29/49005 Y10T29/49156 Y10T29/49169 A61B8/13 A61B8/14 A61B8/543		
审查员(译)	角砾岩，LUCA		
优先权	61/192690 2008-09-18 US 61/192661 2008-09-18 US PCT/CA2009/001363 2009-09-18 WO		
其他公开文献	EP3121844A2 EP3121844B1		
外部链接	Espacenet		

摘要(译)

本发明的特征在于用于制造诸如超声波换能器的电气部件的方法。具体地，本发明提供了图案化电极的方法，例如在超声换能器与电路的连接中;在表面上沉积金属的方法;以及制造用于超声换能器的集成匹配层的方法。本发明还涉及通过本文所述的方法产生的超声换能器。

Figure 1