European Patent Office

Application Number
EP 02 80 5990

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims 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 the first ten claims.

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:

1-4, 22-41, 42 (partially), 43 (partially), 44-51

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: 1-4,22-41,42 (partially),43 (partially), 44-51

Method of attaching nucleic acid molecules to electrically conductive surfaces comprising providing two electrical conductors made of different type of conductive materials and attaching a first set of oligonucleotide probes to a first electrical conductor with an attachment chemistry which binds the first set of oligonucleotide probes to the first electrical conductor but not the second electrical conductor and finally attaching a second set of oligonucleotide probes to the second electrical conductor. Apparatus and method for detecting a target nucleic acid.

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2. claims: 5-9,19 (partially),42 (partially),43 (partially)

Method of attaching nucleic acid molecules to electrically conductive surfaces comprising providing two electrical conductors wherein the second electrical conductor is covered with a masking agent and attaching a first set of oligonucleotide probes to a first electrical conductor with an attachment chemistry which binds the first set of oligonucleotide probes to the first electrical conductor, removing the masking agent from the second electrical conductor and attaching a second set of oligonucleotide probes to the second electrical conductor.

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3. claims: 10-12

Method of attaching multiple nucleic acid molecules to electrically conductive surfaces comprising providing two electrical conductors, attaching metal particles to the first electrical conductor by silanizing a surface of the first electrical conductor and linking the silanized surface to metal particles with a siloxane group and attaching multiple oligonucleotide probes to said metal particles attached to the first electrical conductor.

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4. claims: 13-18, 19 (partially)

Method of attaching multiple nucleic acid molecules to electrically conductive surfaces comprising providing two electrical conductors connected to a voltage source, attracting a first set of oligonucleotide probes toward the first electrical conductor by making the first electrical conductor more positively charged relative to the second electrical conductor, wherein the first set of oligonucleotde probes chemically binds to the first electrical conductor.

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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:

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SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application Number
EP 02 80 5990

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	WO 00/60125 A (CONNOLLY, DENNIS, MICHAEL) 12 October 2000 (2000-10-12) * page 7, last paragraph - page 10, paragraph 1 *	1-4, 22-51	C12Q1/68 C12P19/34 C12M1/34 C07H21/02 C07H21/04
Y	WO 99/04440 A (TECHNION RESEARCH AND DEVELOPMENT FOUNDATION LTD; BRAUN, EREZ; EICHEN,) 28 January 1999 (1999-01-28) * examples 1-15 *	1-4, 22-51	C07H19/00

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

C12Q

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search	Date of completion of the search	Examiner
Munich	4 April 2005	Seroz, T

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
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C04)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 02 80 5990

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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04-04-2005

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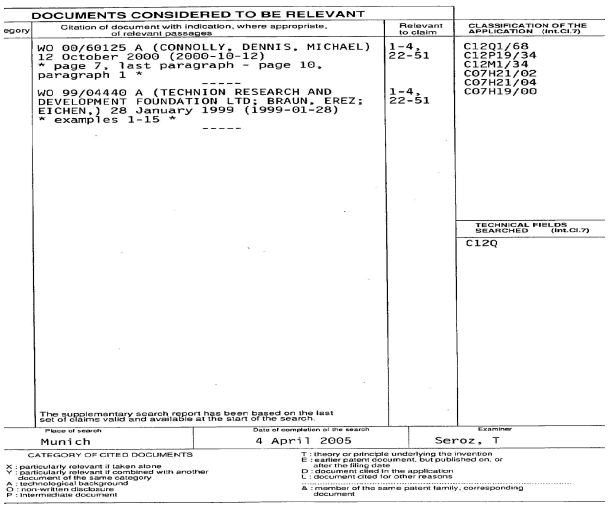
专利名称(译)	将核酸分子附着到导电表面的方法		
公开(公告)号	EP1438438A4	公开(公告)日	2005-08-24
申请号	EP2002805990	申请日	2002-08-07
[标]申请(专利权)人(译)	综合纳米科技		
申请(专利权)人(译)	集成纳米技术有限责任公司		
当前申请(专利权)人(译)	集成纳米技术有限责任公司		
[标]发明人	CONNOLLY DENNIS M DEBOER CHARLES D CHAFIN DAVID R MURANTE RICHARD S		
发明人	CONNOLLY, DENNIS, M. DEBOER, CHARLES, D. CHAFIN, DAVID, R. MURANTE, RICHARD, S.		
IPC分类号	G01N33/53 C12M1/00 C12N15/09 C12Q1/68 C40B40/06 G01N33/543 G01N33/553 G01N33/566 C12P19/34 C12M1/34 C07H21/02 C07H21/04 C07H19/00		
CPC分类号	B82Y30/00 B01J2219/00529 B01J2219/00596 B01J2219/00608 B01J2219/0061 B01J2219/00612 B01J2219/00617 B01J2219/00626 B01J2219/0063 B01J2219/00637 B01J2219/00653 B01J2219/00659 B01J2219/00677 B01J2219/00722 C12Q1/6837 C40B40/06 C40B50/18 G01N33/5438		
优先权	60/310937 2001-08-08 US 10/159429 2002-05-30 US		
其他公开文献	EP1438438A2		
外部链接	Espacenet		

摘要(译)

本发明涉及将核酸分子连接到两个不同电导体上的方法，其中第一组寡核苷酸探针通过附着化学物质附着到第一电导体上，所述附着化学物质将第一组寡核苷酸探针结合到第一电导体但是不要到第二个电导体。然后，将第二组寡核苷酸探针连接到第二电导体。本发明还提供了使用掩蔽剂将核酸分子连接到电导体的方法和通过静电吸引将核酸分子连接到电导体上的方法，使得寡核苷酸探针与电导体化学结合。本发明还公开了用于检测样品中的靶核酸分子的方法和装置。



DOCUMENTS CONSIDERED TO BE RELEVANT

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C12Q

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