Title (en)

LIQUID LABELING WITH FLUORESCENT MICROPARTICLES

Title (de)

FLÜSSIGE MARKIERUNG MIT FLUOREZIERENDEN MIKROPARTIKELN

Title (fr)

MARQUAGE LIQUIDE A L'AIDE DE MICROPARTICULES FLUORESCENTES

Publication

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Application

**EP 99917429 A 19990413**

Priority

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Abstract (en)

[origin: WO9952708A1] Methods of labeling liquids, solids, aerosols, and gases with fluorescent microparticles and/or with microparticles encoded with at least one other discriminator. Labeling protocols are described for such uses as adding at least one date code (for example, the expiration date of a perishable liquid), encoding routing information for one or more liquids in a pipeline having a plurality of branch points, tracing the flow of toxic or other substances into groundwater, tracing liquid flow from a point source into groundwater, tracing groundwater flow, adding a donor Social Security Number, adding a donor name, tracing flow of a liquid or a gas in a living system, adding unique identification to each of a plurality of liquid, solid or gaseous samples, encoding routing information to each of a plurality of liquid samples in a multiplexed analytical system, encoding routing information to each of a plurality of liquid reagents in a multiplexed analytical system, and combinations thereof. In one embodiment, two different fluorescent dye labels are bound to microparticles at eight independent, different concentrations each to create an 8 x 8 = 64 array of distinct microparticle sets suitable for labeling liquids, solids, and gases. When three discriminators are used at 8 levels each, an 8 x 8 x 8 = 512 array of distinct microparticle sets is created. Discriminators include such parameters as particle physical property, particle concentration, spectral property, dye type, dye concentration, label type, and combinations thereof; where particle physical property includes such attributes as particle size, particle shape, particle hydrophobicity, particle hydrophilicity, particle density, and combinations thereof; where spectral property includes such attributes as dye fluroescence absorption, dye fluorescence emission, dye absorption, dye fluorescence polarization, dye fluorescence lifetime, and combinations thereof; and where label type includes such attributes as magnetic property, reactive group, nuclear magnetic resonance, electron spin resonance, positron emission, radioactive property, fluorescence polarization, fluorescence lifetime, and combinations thereof. Kits are devised to permit users to create a large variety of sets of particles for identification purposes in liquids, solids, and gases, and microprocessor controlled, automatic pipetting of kit microparticles are also encompassed by the instant invention.

IPC 1-7

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IPC 8 full level

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Citation (search report)

- [E] WO 9937814 A1 19990729 - LUMINEX CORP [US], et al
- [E] WO 9919515 A1 19990422 - LUMINEX CORP [US]
- [DX] WO 9714028 A2 19970417 - LUMINEX CORP [US], et al
- [DX] US 5723218 A 19980303 - HAUGLAND RICHARD P [US], et al
- [X] US 5573909 A 19961112 - SINGER VICTORIA L [US], et al
- [X] US 4552812 A 19851112 - MARGEL SHLOMO [IL], et al
- [X] EP 0230768 A1 19870805 - SYNTEX INC [US]
- [A] US 5525516 A 19960611 - KRUTAK JAMES J [US], et al
- [DA] US 5656750 A 19970812 - ALLEN RICHARD M [US], et al
- [X] DATABASE COMPENDEX [online] ENGINEERING INFORMATION, INC., NEW YORK, NY, US; OKABE SATOSHI ET AL: "Uptake and release of inert fluorescence particles by mixed population biofilms", XP002232531, Database accession no. EIX97223597218 & BIOTECHNOL BIOENG;BIOTECHNOLOGY AND BIOENGINEERING MAR 5 1997 JOHN WILEY & SONS INC, NEW YORK, NY, USA, vol. 53, no. 5, 5 March 1997 (1997-03-05), pages 459 - 469
- [X] DATABASE COMPENDEX [online] ENGINEERING INFORMATION, INC., NEW YORK, NY, US; BHATTACHARYYA BHUPATI R ET AL: "APPLICATION OF MONODISPERSE FUNCTIONAL AND FLUORESCENT LATEX PARTICLES", XP002232532, Database accession no. EIX78040005441 & POLYM NEWS 1977, vol. 4, no. 3, 1977, pages 107 - 114
- [X] SCHARF R E ET AL: "PLATELET STORAGE LESIONS: ANALYSIS OF PLATELET MEMBRANE GLYCOPROTEINS AND PLATELET-DERIVED MICROPARTICLES BY FLUORESCENCE-ACTIVATED FLOW CYTOMETRY", TRANSFUSION SCIENCE, PERGAMON PRESS, OXFORD, GB, vol. 14, no. 2, 1993, pages 189 - 194, XP000998137, ISSN: 0955-3886
- See references of WO 9952708A1

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