

Title (en)
HYDROPHOBIC AEROGELS

Title (de)
HYDROPHOBE AEROGELE

Title (fr)
AÉROGELS HYDROPHOBES

Publication
EP 2376381 A4 20120801 (EN)

Application
EP 09837789 A 20091201

Priority
• US 2009066229 W 20091201
• US 13856208 P 20081218

Abstract (en)
[origin: WO2010080237A2] Methods of making hydrophobic aerogels are described. Disclosed methods include forming a surface-modified metal oxide aerogel precursor from a sol comprising a solvent, a metal oxide precursor, and a hydrophobic surface modifying agent. The resulting modified precursor can be dried to form hydrophobic aerogels. Methods of forming the surface-modified metal oxide aerogel precursor include hydrolyzing the metal oxide precursor and co-condensing the hydrolyzed metal oxide precursor and the hydrophobic surface modifying agent. Hydrophobic aerogels and hydrophobic aerogel articles are also disclosed.

IPC 8 full level
C01B 33/158 (2006.01)

CPC (source: EP US)
C01B 33/1585 (2013.01 - EP US)

Citation (search report)

- [A] US 2006286360 A1 20061221 - RHINE WENDELL E [US], et al
- [A] US 2006269734 A1 20061130 - KRAJEWSKI MARK T [US], et al
- [X] BHAGAT S D ET AL: "Surface chemical modification of TEOS based silica aerogels synthesized by two step (acid-base) sol-gel process", APPLIED SURFACE SCIENCE, ELSEVIER, AMSTERDAM, NL, vol. 252, no. 12, 15 April 2006 (2006-04-15), pages 4289 - 4297, XP024893411, ISSN: 0169-4332, [retrieved on 20060415], DOI: 10.1016/J.APSUSC.2005.07.006
- [X] A. VENKATESWARA RAO ET AL: "Comparative studies of the physical and hydrophobic properties of TEOS based silica aerogels using different co-precursors", SCIENCE AND TECHNOLOGY OF ADVANCED MATERIALS, vol. 4, no. 6, 30 November 2003 (2003-11-30), pages 509 - 515, XP055028686, ISSN: 1468-6996, DOI: 10.1016/j.stam.2003.12.010
- [X] BHAGAT S D ET AL: "Textural properties of ambient pressure dried water-glass based silica aerogel beads: One day synthesis", MICROPOROUS AND MESOPOROUS MATERIALS, ELSEVIER SCIENCE PUBLISHING, NEW YORK, US, vol. 96, no. 1-3, 26 November 2006 (2006-11-26), pages 237 - 244, XP028038807, ISSN: 1387-1811, [retrieved on 20061126], DOI: 10.1016/J.MICROMESO.2006.07.002
- [X] MARY ANN B. MEADOR ET AL: "Cross-linking Amine-Modified Silica Aerogels with Epoxies: Mechanically Strong Lightweight Porous Materials", CHEMISTRY OF MATERIALS, vol. 17, no. 5, 1 March 2005 (2005-03-01), pages 1085 - 1098, XP055028648, ISSN: 0897-4756, DOI: 10.1021/cm048063u
- [A] SOLEIMANI DORCHEH ET AL: "Silica aerogel; synthesis, properties and characterization", JOURNAL OF MATERIALS PROCESSING TECHNOLOGY, ELSEVIER, NL, vol. 199, no. 1-3, 1 November 2007 (2007-11-01), pages 10 - 26, XP022409626, ISSN: 0924-0136
- See references of WO 2010080237A2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)
WO 2010080237 A2 20100715; WO 2010080237 A3 20100916; BR PI0922596 A2 20151222; CA 2746933 A1 20100715; CN 102317209 A 20120111; EP 2376381 A2 20111019; EP 2376381 A4 20120801; US 2011240907 A1 20111006

DOCDB simple family (application)
US 2009066229 W 20091201; BR PI0922596 A 20091201; CA 2746933 A 20091201; CN 200980156633 A 20091201; EP 09837789 A 20091201; US 200913133984 A 20091201