특허 요지 리스트

명칭	Intercalates formed by co -intercalation of monomer, oligomer or polymer intercalants and surface mod
특허종류	등록특허
출원번호	US1997 -0907950
출원일	1997 -08 -11
공개일자	
공고번호	
등록번호	US6057396
등록일자	2000 -05 -02
국가	US
IPC	C08K -003/00
발명자	Tsipursky; / Beal; Gary / Lan; Tie
출원인	AMCOL International
USCLASS	524/445 / 524/447 / 524/446

특허 요지 리스트

명칭	Method of manufacturing polymer -grade clay for use in
특허종류	등록특허
출원번호	US1998 -0040639
출원일	1998 -03 -18
공개일자	
공고번호	
등록번호	US6050509
등록일자	2000 -04 -18
초록	A clay purification process, for removing impurities recovered with the clay, particularly a montmorillonite clay, includes the steps of separating the clay from rocks and other large non -clay impurities; dispersing the clay and smaller impurities in water, preferably at a concentration of at least about 4% by weight clay, based on the total weight of clay and water, more preferably about 6 -10% by weight clay in water, to provide a clay slurry; passing the clay slurry through a series of hydrocyclones to remove the larger particles (impurities) while retaining clay particles having a size of about 100 microns or less, particularly about 80 microns or less; ion exchanging the clay to remove at least about 95% of the interlayer, multivalent (e.g., divalent and trivalent) cations in an ion exchange column, wherein the multivalent ions are replaced by monovalent cations, such as sodium, lithium and/or hydrogen; and then centrifuging the clay to remove a
국가	US
IPC	B02C -023/08
발명자	Edwards; J / Clarey; Ma / Tsipursky; / Beall; Gar / Eisenhour;
출원인	AMCOL International
USCLASS	241/24.23 / 241/24.11 / 241/21 / 241/27

특허 요지 리스트

명칭	Method of manufacturing polymer-grade clay for use in
특허종류	등록특허
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출원일	1998-03-18
공개일자	
공고번호	
등록번호	US6050509
등록일자	2000-04-18
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국가	US
IPC	B02C-023/08
발명자	Edwards; J / Clarey; Ma / Tsipursky; / Beall; Gar / Eisenhour;
출원인	AMCOL International
USCLASS	241/24.23 / 241/24.11 / 241/21 / 241/27

특허 요지 리스트

명칭	Exfoliated layered materials and nanocomposites comprising matrix polymers and said exfoliated layer
특허종류	등록특허
출원번호	US1995-0488263
출원일	1995-06-07
공개일자	
공고번호	
등록번호	US5698624
등록일자	1997-12-16
초록	Nanocomposites are manufactured by combining a matrix polymer and exfoliated intercalates formed by contacting a phyllosilicate with a water-insoluble polymer to adsorb or intercalate the polymer between adjacent phyllosilicate platelets. Sufficient water-insoluble polymer is adsorbed between adjacent phyllosilicate platelets to expand the adjacent platelets to a spacing of at least about 10 ANGSTROM (as measured after water removal), up to about 100 ANGSTROM and preferably in the range of about 30-40 ANGSTROM, so that the intercalate easily can be exfoliated, e.g., when mixed with a polymer melt, to provide a matrix polymer/platelet composite
국가	US
IPC	C08K-005/36 / C08K-003/34 / C08K-005/35
발명자	Sorokin; A / Beall; Gar / Goldman; A / Tsipursky;
출원인	AMCOL International
USCLASS	524/789 / 524/719 / 524/448 / 524/447 / 524/445 / 524/791

특허 요지 리스트

명칭	Exfoliated layered materials and nanocomposites comprising matrix polymers and said exfoliated layer
특허종류	등록특허
출원번호	US1995-0488263
출원일	1995-06-07
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국가	US
IPC	C08K-005/36 / C08K-003/34 / C08K-005/35
발명자	Sorokin; A / Beall; Gar / Goldman; A / Tsipursky;
출원인	AMCOL International
USCLASS	524/789 / 524/719 / 524/448 / 524/447 / 524/445 / 524/791

특허 요지 리스트

명칭	Intercalates and exfoliates formed with oligomers and polymers and composite materials containing sa
특허종류	등록특허
출원번호	US1995 -0488264
출원일	1995 -06 -07
공개일자	
공고번호	
등록번호	US5552469
등록일자	1996 -09 -03
초록	Exfoliated layered silicate material derived from intercalates formed by contacting the layer material, e.g., a phyllosilicate, with an intercalant polymer to sorb or intercalate the polymer between adjacent platelets of the layered material. Sufficient intercalant polymer is sorbed between adjacent platelets to expand the adjacent platelets to a spacing of at least about 10 ANGSTROM (as measured after water removal), up to about 100 ANGSTROM and preferably in the range of about 30 -45 ANGSTROM , so that the intercalate easily can be exfoliated, e.g., when mixed with a thermoplastic or thermosetting matrix polymer melt, to provide a matrix polymer/platelet nanocomposite material -the platelets being exfoliated
국가	US
IPC	C03C -010/14 / C08K -003/34
발명자	Beall; Gar / Tsipsursky / Goldman; A / Sorokin; A
출원인	AMCOL International
USCLASS	524/449 / 524/447 / 524/446 / 524/445 / 501/4

특허 요지 리스트

명칭	Intercalates and exfoliates formed with N-alkenyl amides and/or acrylate-functional pyrrolidone and
특허종류	등록특허
출원번호	US1997-0951094
출원일	1997-10-15
공개일자	
공고번호	
등록번호	US5849830
등록일자	1998-12-15
초록	Nanocomposites are manufactured by combining a host material, such as an organic solvent or a matrix polymer and exfoliated intercalates formed by contacting a phyllosilicate with an intercalant selected from the group consisting of (1) an N-alkenyl amide monomer and an allylic monomer; (2) an oligomer formed by copolymerizing an N-alkenyl amide monomer and an allylic monomer; (3) a polymer formed by copolymerizing an N-alkenyl amide monomer and an allylic monomer; and (4) mixtures thereof to adsorb or the intercalant between adjacent phyllosilicate platelets. Sufficient polymer is adsorbed between adjacent phyllosilicate platelets to expand the adjacent platelets to increase the spacing at least about 10 ANGSTROM, preferably at least about 20 ANGSTROM (as measured after water removal), up to about 100 ANGSTROM and preferably in the range of about 30-40 ANGSTROM, so that the intercalate easily can be exfoliated, e.g., when mixed with an organic solvent or a polymer melt, to provide a carrier material for drugs and the like, or to
국가	US
IPC	C08L-033/00 / C08K-003/34 / C08J-005/10
발명자	Beall; Gar / Tsipursky; / Vinokour;
출원인	AMCOL International
USCLASS	524/447 / 524/450 / 524/448 / 524/449 / 524/445

특허 요지 리스트

명칭	Intercalates and exfoliates formed with oligomers and polymers and composite materials containing sa
특허종류	등록특허
출원번호	US1997 -0968408
출원일	1997 -11 -12
공개일자	
공고번호	
등록번호	US5877248
등록일자	1999 -03 -02
초록	Nanocomposites are manufactured by combining a host material, such as an organic solvent or a matrix polymer and exfoliated intercalates formed by contacting a phyllosilicate with a polymer to adsorb or intercalate the polymer between adjacent phyllosilicate platelets. Sufficient polymer is adsorbed between adjacent phyllosilicate platelets to expand the adjacent platelets to a spacing of at least about 5 ANGSTROM , preferably at least about 10 ANGSTROM (as measured after water removal), up to about 100 ANGSTROM and preferably in the range of about 30 -40 ANGSTROM , so that the intercalate easily can be exfoliated, e.g., when mixed with an organic solvent or a polymer melt, to provide a carrier material for drugs and the like, or to provide a matrix polymer/platelet composite
국가	US
IPC	C08J -005/10 / C08L -039/06 / C08K -003/34
발명자	Goldman; A / Sorokin; A / Tsipursky; / Beall; Gar
출원인	Amcol International
USCLASS	524/448 / 524/449 / 524/450 / 524/445 / 524/447

특허 요지 리스트

명칭	Intercalates and exfoliates formed with non-EVOH monomers, oligomers and polymers; and EVOH composit
특허종류	등록특허
출원번호	US1996-0761444
출원일	1996-12-06
공개일자	
공고번호	
등록번호	US5844032
등록일자	1998-12-01
초록	Nanocomposites are manufactured by combining an EVOH matrix polymer and exfoliated intercalates formed by contacting a phyllosilicate with a non-EVOH intercalant to adsorb or intercalate the intercalant between adjacent phyllosilicate platelets. Sufficient intercalant is adsorbed between adjacent phyllosilicate platelets to expand the adjacent platelets to a spacing of at least about 5 ANGSTROM, preferably at least about 10 ANGSTROM (as measured after water removal), up to about 100 ANGSTROM and preferably in the range of about 30-40 ANGSTROM, so that the intercalate easily can be exfoliated, e.g., when mixed with the EVOH matrix polymer melt, to provide an EVOH matrix polymer/platelet composite
국가	US
IPC	C08K-003/34
발명자	Engman; St / Serrano; F / Beall; Gar
출원인	Amcol International
USCLASS	524/445 / 524/449

특허 요지 리스트

명칭	Intercalates and exfoliates formed with oligomers and polymers and composite materials containing sa
특허종류	등록특허
출원번호	US1996-0637092
출원일	1996-05-02
공개일자	
공고번호	
등록번호	US5760121
등록일자	1998-06-02
초록	Nanocomposites are manufactured by combining a host material, such as an organic solvent or a matrix polymer and exfoliated intercalates formed by contacting a phyllosilicate with a polymer to adsorb or intercalate the polymer between adjacent phyllosilicate platelets. Sufficient polymer is adsorbed between adjacent phyllosilicate platelets to expand the adjacent platelets to a spacing of at least about 5 ANGSTROM, preferably at least about 10 ANGSTROM (as measured after water removal), up to about 100 ANGSTROM and preferably in the range of about 30-40 ANGSTROM, so that the intercalate easily can be exfoliated, e.g., when mixed with an organic solvent or a polymer melt, to provide a carrier material for drugs and the like, or to provide a matrix polymer/platelet composite
국가	US
IPC	C08L-077/00 / C08K-003/34 / C08J-005/10
발명자	Beall; Gar / Tsipursky; / Sorokin; A / Goldman; A
출원인	AMCOL International
USCLASS	524/446 / 524/445 / 524/449 / 524/450 / 524/447

특허 요지 리스트

명칭	Exfoliated layered materials and nanocomposites comprising said exfoliated layered materials having
특허종류	등록특허
출원번호	US1999-0283954
출원일	1999-04-01
공개일자	
공고번호	
등록번호	US6228903
등록일자	2001-05-08
초록	A phyllosilicate material is exfoliated by admixture of the phyllosilicate with water, and a solvent for a water-insoluble oligomer or polymer that is sorbed or electrostatically bonded to the inner surfaces of the phyllosilicate platelets after exfoliation of the phyllosilicate. Intercalation and exfoliation can be achieved via contact of the phyllosilicate with an organic solvent and water to electrostatically bond one or more polar moieties from the organic solvent to a metal cation on the platelet inner surfaces, so that after evaporation of the water used for intercalation of the organic solvent between phyllosilicate platelets, the platelets do not then collapse together, but remain exfoliated. After exfoliation of the phyllosilicate, the exfoliated platelets are contacted with a polymer/carrier composition that includes a water-insoluble polymer or water-insoluble oligomer, and a solvent for the water-insoluble polymer or oligomer. After exfoliating the phyllosilicate and prior to polymer contact, the individual phyllosilicate platelets are contacted with the polymer/carrier composition to sorb the water-insoluble polymer or water-insoluble oligomer onto one or both surfaces
국가	US
IPC	C08K-003/34 / C08K-009/04 / C08K-009/12
발명자	Cruz; Hann / Serrano; F / Beall; Gar
출원인	AMCOL International
USCLASS	524/446 / 524/444 / 523/216 / 523/209 / 427/221

특허 요지 리스트

명칭	Nanocomposites formed by onium ion-intercalated clay and rigid anhydride-cured epoxy resins
특허종류	등록특허
출원번호	US1999-0272277
출원일	1999-03-19
공개일자	
공고번호	
등록번호	US6251980
등록일자	2001-06-26
초록	Intercalates formed by contacting a layered material, e.g., a phyllosilicate, with an intercalant onium ion spacing agent and an anhydride-curable epoxy resin. The intercalant onium ion spacing agent converts the interlayer region of the layered materials from hydrophilic to hydrophobic, therefore, the anhydride-curable epoxy resin can be easily intercalated into the interlayer spacing. The co-presence of the co-intercalant anhydride-curable epoxy resin in the interlayer space provides surprising increase in glass transition temperature for anhydride-curable epoxy resin matrix polymer/co-intercalant compounded nanocomposites. The nanocomposites (e.g., epoxy-clay) prepared from the intercalants demonstrate enhanced mechanical,
국가	US
IPC	C08K-003/00
발명자	Lan; Tie / Westphal;
출원인	AMCOL International
USCLASS	524/447 / 524/442 / 524/450 / 524/445 / 524/449 / 524/443

특허 요지 리스트

명칭	Intercalates formed by co-intercalation of onium ion spacing/coupling agents and monomer, oligomer o
특허종류	등록특허
출원번호	US1999-0272278
출원일	1999-03-19
공개일자	
공고번호	
등록번호	US6232388
등록일자	2001-05-15
초록	Intercalated layered materials prepared by co-intercalation of an onium ion and MXD6 nylon between the planar layers of a swellable layered material, such as a phyllosilicate, preferably a smectite clay. The spacing of adjacent layers of the layered materials is expanded at least about 3 , preferably at least about 5 , usually preferably to a d-spacing of about 15-20 , e.g., 18 with the onium ion spacing/coupling agent. The intercalation of the MXD6 nylon polymer then increases the spacing of adjacent layers an additional at least 3 , e.g., to at least about 20 , preferably about 25 to about 30
국가	US
IPC	C08K-003/00
발명자	Tomlin; An / Lan; Tie / Cruz; Hann
출원인	AMCOL International
USCLASS	524/447 / 524/445 / 524/446

특허 요지 리스트

명칭	Intercalates formed by co -intercalation of onium ion spacing/coupling agents and monomer, oligomer o
특허종류	등록특허
출원번호	US1999 -0323629
출원일	1999 -06 -01
공개일자	
공고번호	
등록번호	US6225394
등록일자	2001 -05 -01
초록	Nanocomposite layered materials prepared by co - intercalation of an onium ion, preferably an alkoxylated onium ion and an ethylene vinyl alcohol oligomer or polymer between the planar layers of a swellable layered material, such as a phyllosilicate, preferably a smectite clay. The spacing of adjacent layers of the layered materials is expanded at least about 3 , preferably at least about 5 , usually preferably to a d -spacing of about 15 -20 , e.g., 18 with the alkoxylated onium ion spacing/coupling agent. The intercalation of the ethylene vinyl alcohol polymer then increases the spacing of adjacent layers an additional at least 2 , e.g., to at least about 20 , preferably about 25 to about 30 , generally about 28 . Improved O2 barrier properties are observed over a broad range of humidity conditions when intercalation is accomplished by both the solvent route and the direct compounding route. The intercalated and exfoliated layered materials
국가	US
IPC	C08K -003/00
발명자	Tomlin; An / Lan; Tie / Psihogios;
출원인	AMCOL International
USCLASS	524/445 / 524/447 / 524/446