

About Clayteam

Clayteam, a consortium of the National Institute of Advanced Industrial Science and Technology (AIST), has been established for material exploitation, specializing in clay films and inorganic nanoscale materials, through cooperation of "Monodzukuri" (Craftmanship) among various scientific and industrial fields.

Clayteam Outline

Many research efforts have been undertaken for investigation of raw material clays, film-forming methods, processing methods, and applications of clay films developed at AIST in 2006. Consequently, individual development by many research organizations and enterprises has achieved a certain level. Sharable knowledge has also been accumulated through publications, patents, and so on. Moreover, application studies of film and sheet formation from clays and nanosheets have been emerging and attracting attention in the research field of materials science.

However, clay films as a general purpose material still confront technical and economical obstacles to their practical use. Further cooperation by research organizations and enterprises is necessary to address that challenge. "Claist® Liason Committee", established in 2008, based on such understanding, has played an important role through activity for about two years. Now it is desired that "Claist® Liason Committee" be developed to a cooperative organization with enhanced cooperation functions, and that material exploitation specializing in clay films and inorganic nanoscale materials be accelerated and implemented through concentration of "Monodzukuri" science and wisdom

Purpose

This consortium aims to exploit materials specialized in clay films and inorganic nanoscale materials and their application. For this goal, this consortium promotes integrated exploitation through concentration of "Monodzukuri" science and wisdom, while sharing information through cooperation of various scientific and industrial fields. Then this consortium aims at propagation and market formation of materials and related technologies to clay films and inorganic nanoscale materials.

Consortium Activities

Activities

- (1) Technical instruction about materials specialized in clay films and inorganic nanoscale materials.
- (2) Promotion of technology transfer of materials specialized in clay films and inorganic nanoscale materials.
- (3) Collection, research/study, and propagation of information about materials specialized in clay films and inorganic nanoscale materials.
- (4) Opening a sample clay library related to materials specialized in clay films and inorganic nanoscale materials.
- (5) Planning and administration of seminars about materials specialized in clay films and inorganic nanoscale materials.
- (6) Exhibition and public relations.
- (7) Other miscellaneous activities necessary to achieve the purpose of this consortium.

CLAIST

CLAIST® is a film material, which is superior in heat-resistance and high gas barrier properties to conventional materials. The aim of AIST is to develop this CLAIST® technology and expand it in various industrial areas through the network in cooperation with industrial, academic and governmental sectors.
(AIST)

CLAIST-related Products

Insulator film with heat-resistance

Insulator film with heat-resistance is a film material which is made by improving the mechanical strength of CLAIST®. It is a film with excellent heat-resistance, electrical insulation, and high gas barrier properties. It is possible to produce 30-120µm thick roll film. This film is expected to be applied for solar cell back sheets and printable electronic materials, etc.
(SUMITOMOSEIKA CHEMICALS CO., LTD.)

Self-recovery gas barrier film

Self-recovery gas barrier film is a transparent oxygen gas barrier film, which is made by applying a transparent claist layer to PET film as a gass barrier layer. This is the world's first film that has a "self-recovery performance", so it is possible to recover automatically by itself when it gets a scratch and it is possible to restrain deterioration of the gas barrier property when crumpled. This film is capable of being formed into a bag multilayerd with such as polypropylene, etc.
(Daiwa Can Company)

Non-asbestos gasket with heat-resistance

Non-asbestos gasket with heat-resistance is an expanded graphite gasket sheet, which has the world's highest performance. This has inherited conventional advantages of Cleamatex such as decrease powder-fall or burn-in, furthermore, this has improved sealing performance, heat-resistance, handling performance, and safety. So far, this gasket has been actually used many times at various places such as power stations, petrochemistry plants, chemistry plants, and paper factories, etc. and it has superior reliability.
(Japan Matex Co., LTD.)

Clay for films

Kunipia M is a natural swelling clay developed as a material clay for Claist. It has a high-aspect ratio and an excellent gas barrier property. Also, it is superior in heat-resistance and contracts little under the aridity, so it is available as a water-vapor barrier film.
(KUNIMINE INDUSTRIES Co., LTD.)

Transparent fireproof sheet

Nunsheed is a transparent fireproof board, which is made of GFRP (glass-fiber-reinforced plastics) covered with transparent Claist®. The Claist®-coating layer shields the plastic from fire and furthermore, with its oxygen barrier property, it becomes incombustible by preventing supply of oxygen necessary for combustion. Nunseed has an excellent optical transparency and is expected to be used in a wide variety of fields such as architecture, interior, vehicles, and aerospace, etc.
(Miyagi Kasei Co., LTD.)