

NCRC Membership Research Interests

January 2010

Company	Contact Person	e-mail	Phone	Subject
duPont	Patrick Young	patrick.h.young@usa.dupont.com	804-383-4010	Define technology to efficiently spin nanofibers with an average diameter of 25 nm or less
duPont	Patrick Young	patrick.h.young@usa.dupont.com	804-383-4010	Next generation bonding – define technologies which will bond nonwovens without using heat
duPont	Patrick Young	patrick.h.young@usa.dupont.com	804-383-4010	Define basic structure property relationships between nanofibers and scaffold needs for tissue engineering
ELMARCO	Ondrej Kolek	kolek@elmarco.com		Identify route(s) to improving adhesion between nanofibers and substrate fabrics. PA 6 is of particular interest.
ELMARCO	Petrik Stanislav	stanislav.petrik@elmarco.com	+420-489-209-222	Mechanical and morphological properties of nonwoven composites with nanofibers and their applications. Identification of on-line measurement methods for basis weight, defects, fiber diameter, and fabric porosity are possible areas of investigation.
Fraunhofer Institute	Andreas wiegmann	andreas.wiegmann@itwm.fraunhofer.de	+49-631-31600-4380	Discover methods for measuring electric charges in nonwoven and particle filtration effects resulting from it. Modeling with GeoDict/FilterDict software is desirable
INDA	Rory Holmes	rholmes@inda.org	919-233-1210 x134	Hydroentangling pressures have risen with a resultant loss of orifice strip working life. I propose a project to develop a longer lasting material or construction of a Hydroentangling orifice strip that will operate at 200 bars for 1000 hours without loss of jet quality.
Colbond	Luuk van der Molen	luuk.vandermolen@colbond.com	+31-26-366-1953	Study bonding and bond point formation of calender and through air thermal bonding of PA6 and PP webs. Goal is to better understand the fluid deformation of PA6 and PP, just beyond their melting points.

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Colbond	Luuk van der Molen	luuk.vandermolen@colbond.com	+31-26-366-1953	Development of a reproducible tool that can measure mass regularity (deviations) and filament distribution of a non-woven correlated to its functionality, preferably an in line measurement
Colbond	Luuk van der Molen	luuk.vandermolen@colbond.com	+31-26-366-1953	During fiber and nonwoven processing static electricity is usually undesirable. However during web formation static electricity could increase the distance between filaments and improve mass distribution. Fundamental understanding of the mechanism of improved formation via static is desired.
Colbond	Luuk van der Molen	luuk.vandermolen@colbond.com	+31-26-366-1953	In sheath core bicomponent spinning the rheological properties and solidification of the sheath and core influence the behavior of each other. Applying the knowledge of Kikutani et al from Institute of Technology of Tokyo to spinning speeds <4,000 m/min would be useful.
Colbond	Luuk van der Molen	luuk.vandermolen@colbond.com	+31-26-366-1953	In end uses such as filter media, apparel, or automotive panels the ability to thermoform nonwoven fabrics is critical. A model relating thermoforming performance and fabric properties would be extremely useful.
Colbond	Luuk van der Molen	luuk.vandermolen@colbond.com	+31-26-366-1953	During the production of melt spun nonwoven fabrics the ability to filter the polymer melt is of paramount importance in preventing spinneret plugging and spinning breaks. Models predicting the effects of filter fineness and construction on effectiveness would be extremely valuable in polymer filter design.
Dow Chemical	Tirthankar Ghosh	tghosh@rohmmaas.com	215-619-5410	Durable antimicrobial finishes for fibers. Silver is an effective antimicrobial but is expensive. The current method of placing it in fibers is by adding it to the polymer before extrusion. Only the surface silver is effective so this method is costly. A method of applying the silver compound directly on the fiber surfaces is the goal of this program.

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Cotton Inc.	Martin Schreiner	mschreiner@cottoninc.com	919-678-2436	Produce hydroentangled 100% cotton or cotton blend substrates using virgin cotton. Problem: Fundamental information is required in the following areas to dispel belief that only bleached cotton can be used: <ul style="list-style-type: none"> • Virgin cotton preparation • Fiber pre cleaning • Carding benefits of natural wax / pectins • Potential for lower hydroentanglement force • Determination whether lower force reduces filtration needs.
Cotton Inc.	Martin Schreiner Len Farias	mschreiner@cottoninc.com lfarias@cottoninc.com	919-678-2436 919-678-2454	Develop system for in-line scour and/or bleaching of cotton substrate. The objective is to define a quick scour/ bleaching process which inputs low cost virgin cotton and outputs a scoured and/or bleached cotton fabric. The preferred process would be integrated cotton treatment and hydroentangling on a single line. Significant cost savings to the industry could be realized.
Cotton Inc.	Martin Schreiner; Mary Ankeny	mschreiner@cottoninc.com mankeny@cottoninc.com	919-678-2436 919-678-2394	Municipal water systems experience significant problems with water pumps and filters when encountering synthetic, non-dispersing wipes from toilet use. A cotton substrate should solve this problem. A manufacturing process needs to be defined and the chemistry developed to provide a wipe or substrate that disperses when it contacts water.
Cotton Inc.	Mary Ankeny	mankeny@cottoninc.com	919-678-2394	Define the next generation of performance finishes for natural fibers which provide, for example <ul style="list-style-type: none"> • Durable flame retardancy • Improved moisture management • Improved filtration performance

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Industrial Microwave Systems	Darian Spell	Darian.spell@industrialmicrowave.com	919-371-1403	<p>Microwave heating excels at rapid, uniform heating in a precisely controlled manner. Additional fundamental knowledge in the nonwovens context is required in the following areas:</p> <ul style="list-style-type: none"> • Drying efficiency and uniformity • Curing of binders • Microwave sensitive additives to enable thermal bonding
Hollingsworth & Vose	Christina Ruiz Dave Healey John Wertz	christina.ruiz@hovo.com dave.healey@hovo.com john.wertz@hovo.com	478-783-5264 508-850-2191 978-448-7117	<p>Electret filter media lose performance over time. Fundamental knowledge of the cause, including establishing the effects of common contaminants is essential to improving performance. Development of a direct measurement of media charge is also required.</p>
Hollingsworth & Vose	Christina Ruiz Dave Healey John Wertz	christina.ruiz@hovo.com dave.healey@hovo.com john.wertz@hovo.com	478-783-5264 508-850-2191 978-448-7117	<p>The effect of fibers less than three microns on meltblown media is not well quantified. Information in the following areas is required to improve performance:</p> <ul style="list-style-type: none"> • Impact on compaction • Effect of various polymers, bicomponents, and fiber size mixtures on structure openness • Measurement tool for thickness measurement of compressible materials
Hollingsworth & Vose	Christina Ruiz Dave Healey John Wertz	christina.ruiz@hovo.com dave.healey@hovo.com john.wertz@hovo.com	478-783-5264 508-850-2191 978-448-7117	<p>Relate fundamental pore structure differences in membrane materials, fine nonwovens, and random network structures such as wet-laid glass, meltblown, or electrospun to filtration performance.</p>

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Hollingsworth & Vose	Christina Ruiz George Zguris	christina.ruiz@hovo.com george.zguris@hovo.com	478-783-5264 978-448-7166	Many nonwoven applications require a wettable PP or PE fiber for dry laid or wet laid production. Proposers have several routes to be investigated.
Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Develop understanding the decay of charged media when exposed to aerosol of varying shape, size, and chemical composition.
Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Develop a test to predict the performance of pleated nonwoven fabrics.
Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Fundamental study of mixtures of hydrophobic and hydrophilic fibers in filtration media and their impact on filter performance
Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Develop methods for measuring surface resistance, static dissipation and charging of nonwoven surfaces.
Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Establish the permanence of hydrophilic plasma treatments of nonwoven fabrics when exposed to sulfuric acid and potassium hydroxide environments.
Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Provide model for meltblown processing conditions including air, vacuum, polymer feed, and temperatures to tailor fiber diameter, and fabric pore size, tortuosity, and compaction.
Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Fundamental study of the mechanisms in coalescing such as droplet formation.
Hollingsworth & Vose	Christina Ruiz Bill Widrig	christina.ruiz@hovo.com bill.widrig@hovo.com	478-783-5264 978-448-7117	Determine the impact and improvement of beta stability of synthetic fibers on hydraulic filtration media.

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Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Define routes to imparting resistance to smoke generation of nonwoven fabrics.(UL900)
Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Establish PTFE membrane bonding mechanisms.
Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Provide a correlation between surface rough of both media and fibers on filtration performance to allow for optimum design.
Hollingsworth & Vose	Christina Ruiz John Wertz	christina.ruiz@hovo.com john.wertz@hovo.com	478-783-5264 978-448-7117	Establish correlation between fiber diameter distribution and mechanisms of particle capture for both liquid and air filtration.
ExxonMobil	William Ferry	william.m.ferry@exxonmobil.com	281-834-5165	Determine fundamental engineering parameters for predicting the performance of electrostatic charged nonwoven filtration material including the effects of material and processing variables.
ExxonMobil	William Ferry	william.m.ferry@exxonmobil.com	281-834-5165	Adhesion of and to nonwoven fabrics is important in the assembly of hygiene devices and other articles made from them. Requirements for such adhesives are not well understood. A fundamental understanding of technical requirements for such adhesives should be this project's goal.
ExxonMobil	William Ferry	william.m.ferry@exxonmobil.com	281-834-5165	Define variables affecting the use of nonwovens as acoustic insulating materials. Goal is a model predicting such performance.