Applications of nanocellulose/nanocarbon composites
Focus on biotechnology and medicine

Co-culture of human induced pluripotent stem cell-derived retinal pigment epithelial cells and endothelial cells on double collagen-coated honeycomb films

Co-stimulation with IL-1β and TNF-α induces an inflammatory reactive astrocyte phenotype with neurosupportive characteristics in a human pluripotent stem cell model system

Controlled Physiologically Relevant Conditions in a Portable Hypoxic Cell Culture Incubator

Nanocellulose films as substrates for printed electronics

Pneumatic unidirectional cell stretching device for mechanobiological studies of cardiomyocytes

Online Scent Classification by Ion-Mobility Spectrometry Sequences

Correlation of Surface Morphology and Interfacial Adhesive Behavior between Cellulose Surfaces
Quantitative Measurements in Peak-Force Mode with the Colloidal Probe Technique

A compartmentalized neuron-oligodendrocyte co-culture device for myelin research: design, fabrication and functionality testing

Versatile Application of Nanocellulose: From Industry to Skin Tissue Engineering and Wound Healing

Scent Classification by K Nearest Neighbors using Ion-Mobility Spectrometry Measurements

A Portable Microscale Cell Culture System with Indirect Temperature Control

Transportable system enabling multiple irradiation studies under simultaneous hypoxia in vitro

Portable cell culture device for maintaining low oxygen environment: CASE STUDY - proliferation of fibroblasts under hypoxic conditions

Microelectrode array for noninvasive analysis of cardiomyocytes at the single-cell level

Optimizing elastomeric mechanical cell stretching device

Olfactory display prototype for presenting and sensing authentic and synthetic odors

A compact olfactometer for IMS measurements and testing human perception

Modeling and Control of Microscale Cell Culture Environments

Thermal and mechanical behaviour of flax yarns modified with graphene oxide

Mini-incubator for prolonged hypoxia studies on MEA: Effect of hypoxia for iPSC-derived cardiomyocytes
High throughput mechanical micro-scale characterization of composites and the utilization of the results in finite element analysis

Platform for controlling cellular environment

Modeling in vitro cell culture microenvironments

Hydrazone crosslinked hyaluronan-based hydrogels for therapeutic delivery of adipose stem cells to treat corneal defects

A portable live-cell imaging system with an invert-upright-convertible architecture and a mini-bioreactor for long-term simultaneous cell imaging, chemical sensing and electrophysiological recording

Screen-printed curvature sensors for soft robots

Cellulose Nanofiber Alignment Using Evaporation-Induced Droplet-Casting, and Cell Alignment on Aligned Nanocellulose Surfaces

Optimised PDMS tunnel devices on MEAs increase the probability of detecting electrical activity from human stem cell-derived neuronal networks

Fluorimetric oxygen sensor with an efficient optical read-out for in vitro cell models

Pneumatically actuated elastomeric device for simultaneous mechanobiological studies & live-cell fluorescent microscopy

The effect of equiaxial stretching on the osteogenic differentiation and mechanical properties of human adipose stem cells

A durable and biocompatible ascorbic acid-based covalent coating method of polydimethylsiloxane for dynamic cell culture

Cell culture chamber with gas supply for prolonged recording of human neuronal cells on microelectrode array

Computer Vision Measurements for Automated Microrobotic Paper Fiber Studies

Automated high-throughput microbond tester for interfacial shear strength studies

Covalently coated cell stretching devices for osteogenic differentiation of human adipose stem cells

Dispenser system for nanocellulose 3D printing

Engineering and Characterization of Bacterial Nanocellulose Films as Low Cost and Flexible Sensor Material

Mini-incubator For Prolonged Cell Culture, MEA, And Hypoxia Studies Outside An Incubator

Challenges and capabilities of conductive polymeric materials for electromechanical stimulation of stem cells

A case study
Nanocellulose based piezoelectric sensors

Cell Stretching Device for Live-Cell Confocal Microscopy

Automated Estimation of Contact Angle on Hydrophobic Fibers using a Microrobotic Platform

Study of Adhesion Force between Cellulose Micro-sphere and Cellulose Membrane

Nanocellulose based piezoelectric sensors

A novel micro-robotic approach to study the environmental degradation of matrix and fibre materials

Design and simulation of a thermal flow sensor for gravity-driven microfluidic applications

Determination of environmental degradation of matrix and fibre materials with a novel, statistically reliable micro-robotic approach

CytoSpectre
A tool for spectral analysis of oriented structures on cellular and subcellular levels

Adhesive Behavior Study Between Cellulose and Borosilicate Glass Using Colloidal Probe Technique

Automated Microrobotic Manipulation of Paper Fiber Bonds

Automatic image-based detection and inspection of paper fibres for grasping

Electroplated nickel microspring and low-friction precision linear slider
A novel micro-force sensing tool

Microrobotic system for multi-rate measurement of bio-based fibres Z-directional bond strength

Modeling and Experimental Characterization of Pressure Drop in Gravity-Driven Microfluidic Systems

PVDF Microforce Sensor for the Measurement of Z-directional Strength in Paper Fiber Bonds

Data Rate Performance of Droplet Microfluidic Communication System

Industrial Tools for micromanipulation

In situ hybridization of pulp fibres using Mg-Al layered double hydroxides

Integration of microfluidic sample delivery system on silicon nanowire-based biosensor

Automated drop-on-fiber contact angle measurement using a microrobotic platform

Computational Modeling and Structural Improvement of a Pneumatically Actuated Concentric Double-Shell Structure for Cell Stretching
Design and Implementation of an Illumination System for Microrobotic Paper Fiber Studies

Experimental Evaluation of Z-Directional Fibre-Fibre Bond Strength using Microrobotics

Image-based Measurements of Paper Fibers for Automatic Manipulation

Integrated microfluidic culture environments for in vitro cell studies

Integrating Robotic Software Frameworks for Convenient Software Component Exchange in Micro- and Nanoscale Applications

Label-Free and Rapid Electrical Detection of hTSH with CMOS-Compatible Silicon Nanowire Transistor Arrays

Measuring resistivity of silicon nanowire using pseudo-random binary sequence injection

Mechanical analysis of a pneumatically actuated concentric double-shell structure for cell stretching

Methods for Rapid Frequency-Domain Characterization of Leakage Currents in Silicon Nanowire-Based Field-Effect Transistors

Modeling Drug Delivery in Gravity-Driven Microfluidic System

Photocontrol of Mechanical Properties of Pulp Fibers and Fiber-to-Fiber Bonds via Self-Assembled Polysaccharide Derivatives

Pneumatic cell stretching system for cardiac differentiation and culture

Releasing tool-adhered natural fibrous microscale objects with vacuum system

Robotic software frameworks and software component models in the development of automated handling of individual natural fibers

Semi-automatic Measurement of Microfibril Angle on a Microrobotic Platform

The Effect of Refining on Z-directional Strength of Bleached Softwood Kraft Pulp Fibre Bonds using Microrobotics

Integration of Microfluidic System with Silicon Nanowires Biosensor for Multiplexed Detection

Kohti automaattista yksittäisten paperikuitujen manipulointia
Translated title of the contribution: Kohti automaattista yksittäisten paperikuitujen manipulointia

Method for Investigations of Aged Fibre-Fibre Bonds with Micro and Nanorobotic Tools

Scale and Rotation Invariant Two View Microgripper Detection that Uses a Planar Pattern
Three-dimensional calibration of micromanipulators using stereo vision

Towards Fully Automated Pick and Place Operations of Individual Natural Fibers

Washing Durability of Embroidered Polymer Coated RFID Tags

A flexible microrobotic platform for handling microscale specimens of fibrous materials for microscopic studies

Characterizing leakage current in silicon nanowire-based field-effect transistors by applying pseudo-random sequences

Digital Imaging and Piezo-dispenser Actuator in Automatic Flocculation Control

Integration of microfluidic sample delivery system on silicon nanowire-based biosensor

Pseudo-random sequences in analysis of polyvinylidene fluoride piezoelectric sensors

Rapid, simple, and cost-effective treatments to achieve long-term hydrophilic PDMS surfaces

Small and Flexible Metal Mountable Passive UHF RFID Tag on High-Dielectric Polymer-Ceramic Composite Substrate

Structured PDMS chambers for enhanced human neuronal cell activity on MEA platforms

Vision based 3D calibration of micromanipulator in microrobotic fiber characterization platform

Automated Grasping in Manipulation of Individual Paper Fibers

Automatic image-based detection of paper fiber ends

Displacement control of piezoelectric actuators using current and voltage

Fine Structure of Papermaking Fibres: The Final Report of COST Action E54 "Characterization of the fine structure and properties of papermaking fibres using new technologies"

Konenäköalgoritmien käyttö mikrosysteemiteknikassa
Translated title of the contribution: Konenäköalgoritmien käyttö mikrosysteemiteknikassa tutkimuksessa

Measuring bond strengths of individual paper fibers using microrobotics

Microrobotic platform for making, manipulating and breaking individual paper fibre bonds

Microrobotic platform for manipulation and mechanical characterization of individual paper fibres

The Effects of Laser Welding on the Heterogeneous Immunoassay Performance in a Microfluidic Cartridge

Towards automated manipulation and characterization of paper-making fibres and its components
Automated handling of bio-nanowires for nanopackaging

Compensation of detent torque in microstepping of linear permanent magnet stepping motors

Control software for automated microrobotic paper fiber characterization

Dried nanoparticle label reagents for microfluidic immunoassays

Flexibility measurement of individual paper fibers using microrobotics platform

Microrobotic platform for manipulation and flexibility measurement of individual paper fibres

Modeling continuous optoelectrowetting device

New pneumatically actuated PDMS system for liquid handling in SPR devices

Perfusion characterization using flow simulations and μPIV measurements

Sample volume metering in a disposable microfluidic cartridge

Solubility of dried nanoparticles and their nonspecific binding in microfluidic polystyrene channels

Tekesin rahoituksella kehitetään analytiikkaa myrkyllisten sinilevien tunnistamiseen
Translated title of the contribution: Tekesin rahoituksella kehitetään analytiikkaa myrkyllisten sinilevien tunnistamiseen

The effects of laser welding on the heterogeneous immunoassay performance in a microfluidic cartridge

Volume estimation of a liquid plug in a microchannel using a machine vision system

Microrobotics platform for characterization and treatment of single paper fibres

Development of a Parallel Composite-Joint Piezohydraulic Micromanipulator