

Estimation of the largest expected photovoltaic power ramp rates

Tuning electricity generation throughout the year with PV module technology

How consumers' respect for nature and environmental self-assets influence their car brand experiences

Comprehensive assessment brings out shortcomings in almost every school building

Laboratory tests and modelling of mineral wool insulated steel sandwich panels

Ministry of the Environment announces a Guide on Renovation and Repair of Buildings with Moisture and Microbial Damage - From theory to practice

Reliability of the detection of moisture and mould damage in visual inspections

Current collectors for low resistance aqueous flexible printed supercapacitors

Operation of a PV power plant during overpower events caused by the cloud enhancement phenomenon

Assessing and comparing short term load forecasting performance

Practical implementation of adaptive SRF-PLL for three-phase inverters based on sensitivity function and real-time grid-impedance measurements

A novel electrical charging condensing heat exchanger for efficient particle emission reduction in small wood boilers

Acid and ferric sulfate bioleaching of uranium ores
A review

Autonomous reactive power support for smart photovoltaic inverter based on real-time grid-impedance measurements of a weak grid

Sensor-Based Cooperative Multi-Antenna Spectrum Sensing with Imperfect Reporting Channels

Charge transfer characteristics of fullerene-free polymer solar cells via multi-state electronic coupling treatment

Charlie and the CryptoFactory
Towards Secure and Trusted Manufacturing Environments

Distributed small loads as fast frequency reserves
Impact on system performance

Enhancement of EQE for MBE grown InAs/GaAs Quantum Dot Solar Cell with Back Reflector

Enhancing thermophilic dark fermentative hydrogen production at high glucose concentrations via bioaugmentation with *Thermotoga neapolitana*

Hematite Surface Modification toward Efficient Sunlight-Driven Water Splitting Activity
The Role of Gold Nanoparticle Addition

Local Mechanical Properties at the Dendrite Scale of Ni-Based Superalloys Studied by Advanced High Temperature Indentation Creep and Micropillar Compression Tests

Luminescent (Er,Ho)₂O₃ thin films by ALD to enhance the performance of silicon solar cells

Mapping the types of business experimentation in creating sustainable value
A case study of cleantech start-ups

Modification of Surface States of Hematite-Based Photoanodes by Submonolayer of TiO₂ for Enhanced Solar Water Splitting

Numerical modeling of the tool-rock penetration process using FEM coupled with SPH technique

Plant-Based Biodegradable Capacitive Tactile Pressure Sensor Using Flexible and Transparent Leaf Skeletons as Electrodes and Flower Petal as Dielectric Layer

Structural Compatibility of Infrastructures Utilizing Alternative Earth Construction Materials

Urban housing density and infrastructure costs

Power production and microbial community composition in thermophilic acetate-fed up-flow and flow-through microbial fuel cells

Towards the EU emission targets of 2050
Cost-effective emission reduction in Finnish detached houses

Potential of renewable fuel to reduce diesel exhaust particle emissions

Maximum perturbation step size in MPP-Tracking control for ensuring predicted PV power settling behavior

Performance of Solar Cell Grids based on Ag, Au, and Al for Cost-Effective Manufacturing

Building university-industry co-innovation networks in transnational innovation ecosystems
Towards a transdisciplinary approach of integrating social sciences and artificial intelligence

The potential of biomethane in replacing fossil fuels in heavy transport-a case study on Finland

Towards a circular economy by leveraging hazardous resources
A case study of Fortum HorsePower

Cost optimal energy performance renovation measures in a municipal service building in a cold climate

Optimization of emission reducing energy retrofits in Finnish apartment buildings

Understanding tariff designs and consumer behaviour to employ electric vehicles for secondary purposes in the United Kingdom

Photovoltaic properties of low-bandgap (0.7–0.9eV) lattice-matched GaInNAsSb solar junctions grown by molecular beam epitaxy on GaAs

Impact of Different Concrete Types on Radio Propagation
Fundamentals and Practical RF Measurements

Pre-Grant Signaling for Energy-Efficient 5G and Beyond Mobile Devices
Method and Analysis

Artificial intelligence yesterday, today and tomorrow

Intelligent data service for farmers

Teaching for virtual work

GIS-data related route optimization, hierarchical clustering, location optimization, and kernel density methods are useful for promoting distributed bioenergy plant planning in rural areas

Energy Detection-Based Spectrum Sensing over Fisher-Snedecor F Fading Channels

Improved Session Continuity in 5G NR with Joint Use of Multi-Connectivity and Guard Bandwidth

The potential of electric trucks – An international commodity-level analysis

Impedance-based interactions in grid-tied three-phase inverters in renewable energy applications

Direct fixed-step maximum power point tracking algorithms with adaptive perturbation frequency

The economics of renewable CaC_2 and C_2H_2 production from biomass and CaO

Why social sustainability counts
The impact of corporate social sustainability culture on financial success

Charge carrier dynamics in tantalum oxide overlayered and tantalum doped hematite photoanodes

Back Reflector with Diffractive Gratings for Light-Trapping in Thin-Film III-V Solar Cells

Bio-hydrogen Production from Sewage Sludge
Screening for Pretreatments and Semi-continuous Reactor Operation

Combined experimental and theoretical study of acetylene semi-hydrogenation over $\text{Pd}/\text{Al}_2\text{O}_3$

Cost-optimal energy performance measures in a new daycare building in cold climate

Effect of apartment building energy renovation on hourly power demand

Guest editorial joint special section on power conversion & control in photovoltaic power plants

Identification of three-phase grid impedance in the presence of parallel converters

Narrow Bandgap Dilute Nitride Materials for 6-junction Space Solar Cells

Power electronics in renewable energy systems

Remote diagnostics application software for remote handling equipment

Sustainability of bioenergy in finland and globally – fact check

Technology valuation method for supporting knowledge management in technology decisions to gain sustainability

Towards the EU emissions targets of 2050
optimal energy renovation measures of Finnish apartment buildings

How and why does willow biochar increase a clay soil water retention capacity?

Energiatohokkaan arkkitehtisuunnittelun ohjekortisto
Translated title of the contribution: : Instruction card file for energy efficient architectural design

Peruskoulut ja energiatohokkuus
Tilallisista ja toiminnallisista suunnitteluperiaatteista
Translated title of the contribution: : Comprehensive schools and energy efficiency: On spatial and functional design principles

Creating value in the circular economy
A structured multiple-case analysis of business models

Flux-Weakening Control for IPMSM Employing Model Order Reduction

Model Order Reduction of Bearingless Reluctance Motor Including Eccentricity

A comparative analysis of global datasets and initiatives for urban health and sustainability

Quantification of bio-anode capacitance in bioelectrochemical systems using Electrochemical Impedance Spectroscopy

Cloud Enhancement Phenomenon and its Effect on PV Generators

Automatic Meter Infrastructure (AMI) as a part of flexibility market

Comparison of innovation policies for electric vehicle business ecosystems

Effects of electric vehicles and heat pumps on long-term electricity consumption scenarios for rural areas in the nordic environment

Microgrids as part of electrical energy system - Pricing scheme for network tariff of DSO

Use case description of real-time control of microgrid flexibility

Alternative Power-Based Pricing Schemes for Distribution Network Tariff of Small Customers

Constrained Long-Horizon Direct Model Predictive Control for Synchronous Reluctance Motor Drives

Performance of a biotrickling filter for the anaerobic utilization of gas-phase methanol coupled to thiosulphate reduction and resource recovery through volatile fatty acids production

A distributed automation architecture for distribution networks, from design to implementation

Dilute nitride triple junction solar cells for space applications
Progress towards highest AM0 efficiency

Lessons learnt from real-time monitoring of the low voltage distribution network

Production of alkanes from CO₂ by engineered bacteria

Energy consumption of Finnish schools and daycare centers and the correlation to regulatory building permit values

Selenate removal in biofilm systems
Effect of nitrate and sulfate on selenium removal efficiency, biofilm structure and microbial community

Design aspects of all atomic layer deposited TiO₂-Fe₂O₃ scaffold-absorber photoanodes for water splitting

Efficient method for the real-time contingency analysis of meshed HVDC power grids fed by VSC stations

Mechanical stress analysis during a quench in CLIQ protected 16 T dipole magnets designed for the future circular collider

Metabolic pairing of aerobic and anaerobic production in a one-pot batch cultivation

Cross-impact analysis of Finnish electricity system with increased renewables
Long-run energy policy challenges in balancing supply and consumption

Improved modelling of electric loads for enabling demand response by applying physical and data-driven models
Project Response

Online dynamic conductance estimation based maximum power point tracking of photovoltaic generators

Sustainable electric vehicle - Prosumer framework and policy mix

Effects of wastewater constituents and operational conditions on the composition and dynamics of anodic microbial communities in bioelectrochemical systems

Role of Oxide Defects in ALD grown TiO₂ Coatings on Performance as Photoanode Protection Layer

Inoculum pretreatment differentially affects the active microbial community performing mesophilic and thermophilic dark fermentation of xylose

Investigating the kinetics and biofuel properties of *Alstonia congensis* and *Ceiba pentandra* via torrefaction

Coordinated voltage control as a replacement for passive network reinforcements-A case study

Policy Influence on Consumers' Evolution into Prosumers—Empirical Findings from an Exploratory Survey in Europe

A new method to assess the contribution of VSC-HVDC connected wind farms to the primary frequency control of power networks

A novel strategy for optimal placement of locally controlled voltage regulators in traditional distribution systems

Dynamic modeling and analysis of PCM-controlled DCM-operating buck converters-A reexamination

Improved Light Trapping in Quantum Dot Solar Cells Using Double-sided Nanostructuring

Light-trapping enhanced thin-film III-V quantum dot solar cells fabricated by epitaxial lift-off

Techno-economic evaluation of integrating torrefaction with anaerobic digestion

Thermophilic versus mesophilic dark fermentation in xylose-fed fluidised bed reactors
Biohydrogen production and active microbial community

Carbazole-based small molecule electron donors
Syntheses, characterization, and material properties

Effect of hydraulic retention time on continuous electricity production from xylose in up-flow microbial fuel cell

Koulujen ja päiväkotien laskettu ja toteutunut energiankulutus

Kustannusoptimaaliset energiakorjaus- ja uusiutuvan energian tuotannon ratkaisut kunnallisissa palvelurakennuksissa

A demand-based nutrient utilization approach to urban biogas plant investment based on regional crop fertilization

Atomikerroskasvatusmenetelmällä kasvatetun titaanioksidikalvon ominaisuudet valosähkökemiallisessa veden hajottamisessa
Translated title of the contribution: : Properties of Atomic Layer Deposited Titanium Dioxide Film in Photoelectrochemical Water Splitting

Real-time hardware- and software-in-the-loop simulation of decentralised distribution network control architecture

Exhaust emissions of non-road mobile machine
Real-world and laboratory studies with diesel and HVO fuels

Electropolymerized polyazulene as active material in flexible supercapacitors

Aspects of advancement of distribution tariffs for small consumers in Finland

Attractiveness of demand response in the Nordic electricity market - Present state and future prospects

Development options for distribution tariff structures in Finland

Understanding consumers' renewable energy behaviour beyond 'homo economicus'
An exploratory survey in four European countries

Hafnium oxide thin films as a barrier against copper diffusion in solar absorbers

Long-Range Observation of Exciplex Formation and Decay Mediated by One-Dimensional Bridges

CFD based reactivity parameter determination for biomass particles of multiple size ranges in high heating rate devolatilization

Catalytic Activity of AuCu Clusters on MgO(100)
Effect of Alloy Composition for CO Oxidation

Geometric Structure and Chemical Ordering of Large AuCu Clusters
A Computational Study

The effects of calcium and potassium on CO₂ gasification of birch wood in a fluidized bed

Photoinduced Electron Injection from Zinc Phthalocyanines into Zinc Oxide Nanorods
Aggregation Effects

The IDE4L Project
Defining, Designing, and Demonstrating the Ideal Grid for All

On the Efficient Calculation of the Periodic Steady-State Response of Grid-Connected Wind Parks - Part I

A New Miniaturized Sensor for Ultra-Fast On-Board Soot Concentration Measurements

Output power variation of different PV array configurations during irradiance transitions caused by moving clouds

Effects of PV array layout, electrical configuration and geographic orientation on mismatch losses caused by moving clouds

Determining maximum MPP-tracking sampling frequency for input-voltage-controlled PV-interfacing converter

Cavitation erosion, slurry erosion and solid particle erosion performance of metal matrix composite (MMC) coatings sprayed with modern high velocity thermal spray processes

Chasing measurements for real-world emissions of city buses

Controlling emissions of natural gas engines

Cultivation of *Scenedesmus acuminatus* in different liquid digestates from anaerobic digestion of pulp and paper industry biosludge

Design of a 25 MWe Solar Thermal Power Plant in Iran with Using Parabolic Trough Collectors and a Two-Tank Molten Salt Storage System

Numerical simulation and measurements of drying of Finnish concrete grades

Photophysical properties of porphyrin dimer-single-walled carbon nanotube linked systems

Rakennusfysiikka 2017. Uusimmat tutkimustulokset ja hyvät käytännön ratkaisut
24.-26.10.2017, Tampere. Seminaarijulkaisu 5 - Osa 1

Rakennusfysiikka 2017. Uusimmat tutkimustulokset ja hyvät käytännön ratkaisut
24.-26.10.2017, Tampere. Seminaarijulkaisu 5 - Osa 2

Rakennusten rakennusfysikaalisen suunnittelun ja toteutuksen periaatteet

Release of Potassium during Devolatilization of Spruce Bark

Particle emissions characterization from a medium-speed marine diesel engine with two fuels at different sampling conditions

Thermal Modification of ALD Grown Titanium Oxide Ultra Thin Film for Photoanode Applications

Optimal control of pump rotational speed in filling and emptying a reservoir
minimum energy consumption with fixed time

Apparent velocity of shadow edges caused by moving clouds

Multicriteria selection in concept design of a divertor remote maintenance port in the EU DEMO reactor using an AHP participative approach

A Unified Modeling Approach of Multi-Terminal VSC-HVDC Links for Dynamic Simulations of Large-Scale Power Systems

Analysis of shading periods caused by moving clouds

Elimination of arsenic-containing emissions from gasification of chromated copper arsenate wood

Exposure to biological and chemical agents at biomass power plants

Power flow solutions of AC/DC micro-grid structures

Comparison of photovoltaic and wind generators as dynamic input sources to power processing interfaces

Cost-causation based approach in forming power-based distribution network tariff for small customers

Network impacts of distribution power tariff schemes with active customers

The role of residential prosumers initiating the energy innovation ecosystem to future flexible energy system

A generalized frame of reference for the incorporation of, multi-terminal VSC-HVDC systems in power flow solutions

Modeling of the catalytic effects of potassium and calcium on spruce wood gasification in CO₂

Liquid fertilizer products from anaerobic digestion of food waste
Mass, nutrient and energy balance of four digestate liquid treatment systems

Stand-Off Radioluminescence Mapping of Alpha Emitters under Bright Lighting

Correlation of wear and work in dual pivoted jaw crusher tests

Power quality in distribution networks with electric vehicle charging - A research methodology based on field tests and real data

Influence of As/group-III flux ratio on defects formation and photovoltaic performance of GaInNAs solar cells

Effect of Hole Transporting Material on Charge Transfer Processes in Zinc Phthalocyanine Sensitized ZnO Nanorods

Antireflection composite coatings for organic solar cells

Ambient-Pressure XPS Study of a Ni-Fe Electrocatalyst for the Oxygen Evolution Reaction

Planning land use for biogas energy crop production
The potential of cutaway peat production lands

Microbial electrochemical technologies with the perspective of harnessing bioenergy
Maneuvering towards upscaling

High efficiency dilute nitride solar cells
Simulations meet experiments

Influence of temperature-induced copper diffusion on degradation of selective chromium oxy-nitride solar absorber coatings

Roll-to-roll application of photocatalytic TiO₂ nanoparticles for printed functionality

The formation and physical properties of the particle emissions from a natural gas engine

Metabolic engineering of *Acinetobacter baylyi* ADP1 for removal of *Clostridium butyricum* growth inhibitors produced from lignocellulosic hydrolysates

Single-source multibattery solar charger
Case study and implementation issues

Power generation in fed-batch and continuous up-flow microbial fuel cell from synthetic wastewater

Suboptimal search strategies with bounded computational complexity to solve long-horizon direct model predictive control problems

Construction of an Interconnected Nanostructured Carbon Black Network
Development of Highly Stretchable and Robust Elastomeric Conductors

Compensation of PV generator output power fluctuations with energy storage systems

Recognition of shading events caused by moving clouds and determination of shadow velocity from solar radiation measurements

Superatom Model for Ag-S Nanocluster with Delocalized Electrons

Searching for a robust strategy for minimizing alkali chlorides in fluidized bed boilers during burning of high SRF-energy-share fuel

Electrospun Black Titania Nanofibers
Influence of Hydrogen Plasma-Induced Disorder on the Electronic Structure and Photoelectrochemical Performance

Cascoded Power Stage With Automatic Dead Time Generation

Low-Voltage DC Distribution-Utilization Potential in a Large Distribution Network Company

Photoinduced Electron Transfer in CdSe/ZnS Quantum Dot-Fullerene Hybrids

Divertor remote handling for DEMO
Concept design and preliminary FMECA studies

Synthesis and study of electrochemical and optical properties of substituted perylenemonoimides in solutions and on solid surfaces

Improved adaptive input voltage control of a solar array interfacing current mode controlled boost power stage

A real-time electrically controlled active matching circuit utilizing genetic algorithms for biomedical WPT applications

Catalytic effect of Ca and K on CO₂ gasification of spruce wood char

Effect of Multilevel Inverter Supply on Core Losses in Magnetic Materials and Electrical Machines

A novel VSC-HVDC link model for dynamic power system simulations

Characteristics and agronomic usability of digestates from laboratory digesters treating food waste and autoclaved food waste

Engineered nanomaterials reduce but do not resolve life cycle environmental impacts of power capacitors

Fermentative metabolism of an anaerobic, thermophilic consortium on plant polymers and commercial paper samples

Improved bioconversion of crude glycerol to hydrogen by statistical optimization of media components

Silver sulfide nanoclusters and the superatom model

Driving pattern analysis of Nordic region based on National Travel Surveys for electric vehicle integration

Comparison of Detection Techniques for Multipath Propagation of Pseudolite Signals Used in Dense Industrial Environments

Driving forces of road freight CO₂ in 2030

Enquête de la variabilité cycle-à-cycle du NO dans la combustion homogène

Translated title of the contribution: : Investigation of cycle-to-cycle variability of NO in homogeneous combustion

Interfacing renewable energy sources for maximum power transfer-Part II
Dynamics

MBE GROWN GaInNAsSb MULTIJUNCTION SOLAR CELLS: PATH TOWARDS 50% EFFICIENCY

On the benefit of long-horizon direct model predictive control for drives with LC filters

Reformulation of the long-horizon direct model predictive control problem to reduce the computational effort

Intrinsic momentum transport in up-down asymmetric tokamaks

Variable switching point predictive torque control of induction machines

Bioprocessing of enhanced cellulase production from a mutant of *Trichoderma asperellum* RCK2011 and its application in hydrolysis of cellulose

Composition dependent growth dynamics in molecular beam epitaxy of GaInNAs solar cells

Inhibitory effects of substrate and soluble end products on biohydrogen production of the alkalithermophile *Caloramator celer*
Kinetic, metabolic and transcription analyses

In-use vs. type-approval fuel consumption of current passenger cars in Europe

Fabrication of ssDNA/oligo(ethylene glycol) monolayers by promoted exchange reaction with thiol and disulfide substituents

Comparison of finite-element-based state-space models for PM synchronous machines

Design driven world of cellulose-from bulk to luxury?

Nanocellulose aerogel membranes for optimal electrolyte filling in dye solar cells

Nickel-based HVOF coatings promoting high temperature corrosion resistance of biomass-fired power plant boilers

Scanner abdominal

Étude comparative de l'exposition patient en routine clinique sur des appareils avec et sans reconstruction itérative

Translated title of the contribution: : Abdominal CT scan: A comparative study of patient exposure in clinical routine on devices with and without iterative reconstruction

Software design for simulating microbial bioprocesses in bioreactor

Direct model predictive current control strategy of dc-dc boost converters

Fabrication of ssDNA/Oligo(ethylene glycol) monolayers and patterns by exchange reaction promoted by ultraviolet light irradiation

Non-sterile process for biohydrogen and 1,3-propanediol production from raw glycerol

Prospecting hydrogen production of Escherichia coli by metabolic network modeling

Model predictive control of the interleaved dc-dc boost converter with coupled inductors

Renewable vs. traditional energy management solutions - A Finnish hospital facility case

Variable switching point predictive torque control for the three-level neutral point clamped inverter

Irradiation promoted exchange reaction with disulfide substituents

Organic silicon compounds in biogases produced from grass silage, grass and maize in laboratory batch assays

Application of the Pegasor Particle Sensor for the Measurement of Mass and Particle Number Emissions

Use of a Catalytic Stripper as an Alternative to the Original PMP Measurement Protocol

Attitude-behaviour gap in energy issues

Case study of three different Finnish residential areas

Mismatch losses in PV power generators caused by partial shading due to clouds

Orientation insensitive power transfer by magnetic resonance for mobile devices

Roll-to-roll atomic layer deposition for flexible substrates

Wear resistance of nanoparticle coatings on paperboard

Methane production from maize in Finland - Screening for different maize varieties and plant parts

Model predictive control of the internal voltages of a five-level active neutral point clamped converter

Model predictive pulse pattern control for the five-level active neutral point clamped inverter

Impact of biodiesel application at various blending ratios on passenger cars of different fueling technologies

Consumer panel on the readiness of finns to behave in a more pro-environmental manner

A first principles study of water adsorption on α -Pu (0 2 0) surface

Demonstration of increased lipid accumulation potential of stigeoclonium sp., Kütz. BUM11007 under nitrogen starved regime
A new source of lipids for biodiesel production

Financial viability of energy-efficiency measures in a new detached house design in Finland

Influence of nutrient deprivations on lipid accumulation in a dominant indigenous microalga Chlorella sp., BUM11008
Evaluation for biodiesel production

Surface-relief gratings and stable birefringence inscribed using light of broad spectral range in supramolecular polymer-bisazobenzene complexes

High temperature oxidation behaviour of MnCO_2O_4 coating on crofer 22 APU manufactured by a novel solution precursor plasma spray process (SPPS)

Hydrogen and methane yields of untreated, water-extracted and acid (HCl) treated maize in one- and two-stage batch assays

Trace compounds affecting biogas energy utilisation - A review

Power flow initialisation of dynamic studies with induction motor loads

Mitigation of greenhouse gas emissions by adopting anaerobic digestion technology on dairy, sow and pig farms in Finland

Environmental and economic evaluation of solar thermal panels using exergy and dimensional analysis

Manganese-cobalt spinel coatings for SOFC metallic interconnects manufactured by conventional plasma spraying (PS) and suspension plasma spraying (SPS)

Determination of organic silicon compounds in biogas from wastewater treatments plants, landfills, and co-digestion plants

Modeling the effect of inverter supply on eddy-current losses in synchronous machines

One-stage H₂ and CH₄ and two-stage H₂ + CH₄ production from grass silage and from solid and liquid fractions of NaOH pre-treated grass silage

Screening boreal energy crops and crop residues for methane biofuel production

Batch dark fermentative hydrogen production from grass silage
The effect of inoculum, pH, temperature and VS ratio

Laboratory investigations on co-digestion of energy crops and crop residues with cow manure for methane production
Effect of crop to manure ratio

Trace compounds of biogas from different biogas production plants

Statistical short-term network planning of distribution system and distributed generation

Anaerobic co-digestion of potato tuber and its industrial by-products with pig manure

Input Invariance as a Method to Reduce EMI Filter Interactions in Telecom DPS Systems

The effects of intermittent charging on VRLA battery life expectancy in telecom applications

Use of unterminated two-port modeling technique in analysis of input filter interactions in telecom DPS systems

Dynamics of a buck converter with a constant power load

DC UPS system's reliability performance
Facts and fiction

Shape of battery capacity-life curve as a decisive decision-making parameter

Novel ways to improve rectifier performance from power systems' reliability viewpoint

AC-UPS reliability and availability performance
Comparison of available solutions

Theoretical studies of structural properties of the high-T_c superconductor Y₁Ba₂Cu₃O_{7-x}