

**Sensor Fusion for Unobtrusive Respiratory Rate Estimation in Dogs.** / Antink, Christoph Hoog; Pirhonen, Mikko; Väättäjä, Heli; Somppi, Sanni; Tornqvist, Heini; Cardo, Anna; Teichmann, Daniel; Vainio, Outi; Surakka, Veikko; Vehkaoja, Antti.  
In: IEEE Sensors Journal, Vol. 19, No. 16, 15.08.2019, p. 7072-7081.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Methods for simultaneous robot-world-hand-eye calibration : A comparative study.** / Ali, Ihtisham; Suominen, Olli; Gotchev, Atanas; Morales, Emilio Ruiz.  
In: Sensors (Switzerland), Vol. 19, No. 12, 2837, 02.06.2019.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Automatic numerical differentiation by maximum likelihood estimation of a linear Gaussian state space model.** / Piche, Robert.  
2019 18th European Control Conference, ECC 2019. IEEE, 2019. p. 1861-1865.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Composite nonlinear feedback control of a JIB trolley of a tower crane behaviors.** / Pyrhönen, Veli-Pekka; Vilko, Matti K.  
2019 18th European Control Conference, ECC 2019. IEEE, 2019. p. 1124-1129 8796229.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Impact of Different Concrete Types on Radio Propagation : Fundamentals and Practical RF Measurements.** / Asp, Ari; Hentilä, Tuomo; Valkama, Mikko; Pikkuvirta, Jussa; Hujanen, Arto; Huhtinen, Ismo.  
2019 4th International Conference on Smart and Sustainable Technologies, SpliTech 2019. ed. / Joel J.P.C. Rodrigues; Petar Solic; Toni Perkovic; Katarina Vukojevic; Joel J.P.C. Rodrigues; Luigi Patrono; Sandro Nizetic. IEEE, 2019.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Location-based beamforming architecture for efficient farming applications with drones.** / Wang, Wenbo; Okati, Niloofar; Tanash, Islam; Riihonen, Taneli; Lohan, Elena-Simona.  
2019 International Conference on Localization and GNSS, ICL-GNSS 2019. ed. / Elena-Simona Lohan; Alexander Rugamer; Jari Nurmi; Wolfgang Koch; Albert Heuberger. IEEE, 2019.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Methods for long-term GNSS clock offset prediction.** / Pihlajasalo, Jaakko; Leppäkoski, Helena; Kuismanen, Saara; Ali-Löytty, Simo; Piche, Robert.  
2019 International Conference on Localization and GNSS, ICL-GNSS 2019. ed. / Elena-Simona Lohan; Alexander Rugamer; Jari Nurmi; Wolfgang Koch; Albert Heuberger. IEEE, 2019.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Secure environmental monitoring for industrial internet of things : From framework to live implementation.** / Bezzateev, Sergey; Voloshina, Natalia; Zhidanov, Konstantin; Ometov, Aleksandr.  
2019 International Conference on Localization and GNSS, ICL-GNSS 2019. ed. / Elena-Simona Lohan; Alexander Rugamer; Jari Nurmi; Wolfgang Koch; Albert Heuberger. IEEE, 2019.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Bioimpedance Sensor Array for Long-Term Monitoring of Wound Healing from Beneath the Primary Dressings and Controlled Formation of H<sub>2</sub>O<sub>2</sub> Using Low-Intensity Direct Current.** / Kekonen, Atte; Bergelin, Mikael; Johansson, Max; Kumar Joon, Narender; Bóbačka, Johan; Viik, Jari.  
In: Sensors, Vol. 19, No. 11, 31.05.2019.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Double-side pumped membrane external-cavity surface-emitting laser (MECSEL) with increased efficiency emitting > 3 W in the 780 nm region.** / Kahle, Hermann; Phung, Hoy-My; Penttinen, Jussi-Pekka; Rajala, Patrik; Tukiainen, Antti; Ranta, Sanna; Guina, Mircea.  
2019 Conference on Lasers and Electro-Optics, CLEO 2019 - Proceedings. IEEE, 2019.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Error analysis of NOMA-based user cooperation with SWIPT.** / Li, Suyue; Bariah, Lina; Muhaidat, Sami; Sofotasios, Paschalis; Liang, Jie; Wang, Anhong.

Proceedings - 15th Annual International Conference on Distributed Computing in Sensor Systems, DCOSS 2019. IEEE, 2019. p. 507-513.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Frequency Comb Generation in a Continuous-Wave Pumped Second-Order Nonlinear Waveguide Resonator.** / Abdallah, Zeina; Stefszky, Michael; Ulvila, Ville; Silberhorn, Christine; Vainio, Markku.

2019 Conference on Lasers and Electro-Optics, CLEO 2019 - Proceedings. IEEE, 2019.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**High-Q resonance train in a plasmonic metasurface.** / Saad-Bin-Alam, Md; Reshef, Orad; Huttunen, Mikko J.; Carlow, Graham; Sullivan, Brian; Menard, Jean Michel; Dolgaleva, Ksenia; Boyd, Robert W.

2019 Conference on Lasers and Electro-Optics, CLEO 2019 - Proceedings. IEEE, 2019.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Optical Frequency Comb Photoacoustic Spectroscopy.** / Sadiq, Ibrahim; Mikkonen, Tommi; Vainio, Markku; Toivonen, Juha; Foltynowicz, Aleksandra.

2019 Conference on Lasers and Electro-Optics, CLEO 2019 - Proceedings. IEEE, 2019.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Alpha radiation-induced luminescence by am-241 in aqueous nitric acid solution.** / Kerst, Thomas; Malmbeck, Rikard; Ial Banik, Nidhu L.; Toivonen, Juha.

In: Sensors (Switzerland), Vol. 19, No. 7, 1602, 01.04.2019.

Research output: Contribution to journal › Article › Scientific › peer-review

**Positioning information privacy in intelligent transportation systems : An overview and future perspective.** / Ometov, Aleksandr; Bezzateev, Sergey; Davydov, Vadim; Shchesniak, Anna; Masek, Pavel; Lohan, Elena Simona; Koucheryavy, Yevgeni.

In: Sensors, Vol. 19, No. 7, 1603, 01.04.2019.

Research output: Contribution to journal › Article › Scientific › peer-review

**Circularly Polarized Textile Tag Antenna for Wearable Passive UHF RFID Systems.** / Kuang, Ye; Ma, Shubin; Ukkonen, Leena; Virkki, Johanna; Björninen, Toni.

2018 International Applied Computational Electromagnetics Society Symposium in China, ACES-China 2018. IEEE, 2019.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Comparison of Human Head Phantoms with Different Complexities for Implantable Antenna Development.** / Ma, Shubin; Ukkonen, Leena; Sydänheimo, Lauri; Björninen, Toni.

2018 International Applied Computational Electromagnetics Society Symposium in China, ACES-China 2018. IEEE, 2019.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Advancements in Solution Processable Devices using Metal Oxides For Printed Internet-of-Things Objects.** / Berger, Paul R.; Li, Miao; Mattei, Ryan M.; Niang, Maimouna A.; Talisa, Noah; Tripepi, Michael; Harris, Brandon; Bhalerao, Sagar R.; Chowdhury, Enam A.; Winter, Charles H.; Lupo, Donald.

2019 Electron Devices Technology and Manufacturing Conference, EDTM 2019. IEEE, 2019. p. 160-162.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Charge Storage Level Sensor RFID Tag : Impedance Matching and Experimental Characterisation.** / Pournoori, Nikta; Ukkonen, Leena; Sydänheimo, Lauri; Björninen, Toni.

13th European Conference on Antennas and Propagation, EuCAP 2019. IEEE, 2019.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Optimization of RFID-Based Tunnel Access Monitoring System Antenna Reading Areas.** / Kordelin, Kai; Virkki, Johanna; Kordelin, Jaana; Kuusman, Joel; Mattila, Jussi; Johansson, Markku; Ukkonen, Leena; Sydänheimo, Lauri.

13th European Conference on Antennas and Propagation, EuCAP 2019. IEEE, 2019. 8739592.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Path Loss Characterization for Intra-Vehicle Wearable Deployments at 60 GHz.** / Semkin, Vasilii; Ponomarenko-Timofeev, Aleksei; Karttunen, Aki; Galinina, Olga; Andreev, Sergey; Koucheryavy, Yevgeni.  
13th European Conference on Antennas and Propagation, EuCAP 2019. IEEE, 2019.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Strain Reliability of Embroidered Passive UHF RFID Tags on 3D-printed Substrates.** / Khan, Zahangir; Rizwan, Muhammad; Rusanen, Riku; Ukkonen, Leena; Virkki, Johanna.  
13th European Conference on Antennas and Propagation, EuCAP 2019. IEEE, 2019.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Energy Detection-Based Spectrum Sensing over Fisher-Snedecor F Fading Channels.** / Yoo, Seong Ki; Cotton, Simon L.; Sofotasios, Paschalis C.; Muhaidat, Sami; Badarneh, Osamah S.; Karagiannidis, George K.  
2018 IEEE Global Communications Conference. IEEE, 2019. 8647778.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Improved Session Continuity in 5G NR with Joint Use of Multi-Connectivity and Guard Bandwidth.** / Kovalchukov, Roman; Moltchanov, Dmitri; Begishev, Vyacheslav; Samuylov, Andrey; Andreev, Sergey; Koucheryavy, Yevgeni; Samouylov, Konstantin.  
2018 IEEE Global Communications Conference, GLOBECOM 2018. IEEE, 2019.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**M2M Communication Assessment in Energy-Harvesting and Wake-Up Radio Assisted Scenarios Using Practical Components.** / Rinne, Jukka; Keskinen, Jari; Berger, Paul R.; Lupo, Donald; Valkama, Mikko.  
In: Sensors (Basel, Switzerland), Vol. 18, No. 11, 16.11.2018.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Inertial Odometry on Handheld Smartphones.** / Solin, Arno; Cortes, Santiago; Rahtu, Esa; Kannala, Juho.  
2018 21st International Conference on Information Fusion, FUSION 2018. IEEE, 2018. p. 1361-1368 8455482.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**User Positioning in mmW 5G Networks Using Beam-RSRP Measurements and Kalman Filtering.** / Rastorgueva-Foi, Elizaveta; Costa, Mário; Koivisto, Mike; Leppänen, Kari; Valkama, Mikko.  
2018 21st International Conference on Information Fusion, FUSION 2018. IEEE, 2018. p. 1150-1156 8455289.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Inertial Sensor-Based State Estimation of Flexible Links Subject to Bending and Torsion.** / Mäkinen, Petri; Mononen, Teemu; Mattila, Jouni.  
2018 14th IEEE/ASME International Conference on Mechatronics and Embedded Systems and Applications, MESA 2018. IEEE, 2018. 8449188.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Real-time and Robust Collaborative Robot Motion Control with Microsoft Kinect @ v2.** / Teke, Burak; Lanz, Minna; Kämäräinen, Joni-Kristian; Hietanen, Antti.  
2018 14th IEEE/ASME International Conference on Mechatronics and Embedded Systems and Applications, MESA 2018. IEEE, 2018. 8449156.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Role-based visualization of industrial IoT-based systems.** / Mahmoodpour, Mehdi; Lobov, Andrei; Lanz, Minna; Mäkelä, Petteri; Rundas, Niko.  
2018 14th IEEE/ASME International Conference on Mechatronics and Embedded Systems and Applications, MESA 2018. IEEE, 2018. 8449183.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Fabrication and reliability evaluation of passive UHF RFID T-shirts.** / Chen, X.; He, H.; Ukkonen, L.; Virkki, J.; Lu, Y.; Lam, H.

2018 IEEE International Workshop on Antenna Technology, iWAT2018 - Proceedings. IEEE, 2018. p. 1-4.  
Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**Acquiring respiration rate from photoplethysmographic signal by recursive bayesian tracking of intrinsic modes in time-frequency spectra.** / Pirhonen, Mikko; Peltokangas, Mikko; Vehkaoja, Antti.

In: Sensors, Vol. 18, No. 6, 1693, 01.06.2018.

Research output: Contribution to journal > Article > Scientific > peer-review

**Evaluation of dry electrodes in canine heart rate monitoring.** / Virtanen, Juhani; Somppi, Sanni; Törnqvist, Heini; Jeyhani, Vala; Fiedler, Patrique; Gizatdinova, Yulia; Majaranta, Päivi; Väättäjä, Heli; Cardó, Anna Valldeoriola; Leikkala, Jukka; Tuukkanen, Sampo; Surakka, Veikko; Vainio, Outi; Vehkaoja, Antti.

In: Sensors, Vol. 18, No. 6, 1757, 01.06.2018.

Research output: Contribution to journal > Article > Scientific > peer-review

**Restoration of low-dose digital breast tomosynthesis.** / Borges, Lucas R.; Azzari, Lucio; Bakic, Predrag R.; Maidment, Andrew D.A.; Vieira, Marcelo A.C.; Foi, Alessandro.

In: Measurement Science and Technology, Vol. 29, No. 6, 064003, 19.04.2018.

Research output: Contribution to journal > Article > Scientific > peer-review

**A novel technique for analysis of postural information with wearable devices.** / Jeyhani, Vala; Mahdiani, Shadi; Viik, Jari; Oksala, Niku; Vehkaoja, Antti.

2018 IEEE 15th International Conference on Wearable and Implantable Body Sensor Networks, BSN 2018. IEEE, 2018. p. 30-33.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**An activity recognition framework deploying the random forest classifier and a single optical heart rate monitoring and triaxial accelerometer wrist-band.** / Mehrang, Saeed; Pietilä, Julia; Korhonen, Ilkka.

In: Sensors, Vol. 18, No. 2, 613, 22.02.2018.

Research output: Contribution to journal > Article > Scientific > peer-review

**Detection and Classification of Acoustic Scenes and Events : Outcome of the DCASE 2016 Challenge.** / Mesaros, Annamaria; Heittola, Toni; Benetos, Emmanouil; Foster, Peter; Lagrange, Mathieu; Virtanen, Tuomas; Plumbley, Mark D.

In: IEEE/ACM Transactions on Audio Speech and Language Processing, Vol. 26, No. 2, 02.2018, p. 379-393.

Research output: Contribution to journal > Article > Scientific > peer-review

**Screen-printed curvature sensors for soft robots.** / Koivikko, Anastasia; Raei, Ehsan Sadeghian; Mosallaei, Mahmoud; Mäntysalo, Matti; Sariola, Veikko.

In: IEEE Sensors Journal, Vol. 18, No. 1, 2018, p. 223-230.

Research output: Contribution to journal > Article > Scientific > peer-review

**Separation of Moving Sound Sources Using Multichannel NMF and Acoustic Tracking.** / Nikunen, Joonas; Diment, Aleksandr; Virtanen, Tuomas.

In: IEEE/ACM Transactions on Audio Speech and Language Processing, Vol. 26, No. 2, 2018, p. 281-295.

Research output: Contribution to journal > Article > Scientific > peer-review

**Designing, Manufacturing and Testing of a Piezoelectric Polymer Film In-Sole Sensor for Plantar Pressure Distribution Measurements.** / Rajala, Satu; Mattila, Raisa; Kaartinen, Ilkka; Leikkala, Jukka.

In: IEEE Sensors Journal, Vol. 17, No. 20, 15.10.2017, p. 6798-6805.

Research output: Contribution to journal > Article > Scientific > peer-review

**Adaptive and nonlinear control of discharge pressure for variable displacement axial piston pumps.** / Koivumäki, Janne; Mattila, Jouni.

In: Journal of Dynamic Systems, Measurement and Control: Transactions of the ASME, Vol. 139, No. 10, 101008, 01.10.2017.

Research output: Contribution to journal > Article > Scientific > peer-review

**Fluorimetric oxygen sensor with an efficient optical read-out for in vitro cell models.** / Välimäki, Hannu; Verho, Jarmo; Kreutzer, Joose; Kattippambil Rajan, Dhanesh; Ryyänen, Tomi; Pekkanen-Mattila, Mari; Ahola, Antti; Tappura, Kirsi; Kallio, Pasi; Lekkala, Jukka.

In: Sensors and Actuators B: Chemical, Vol. 249, 01.10.2017, p. 738-746.

Research output: Contribution to journal > Article > Scientific > peer-review

**Chipless graphene tag and dual-CP reader for Internet of Things.** / Dong, Guoqing; Shen, Yizhu; He, Han; Virkki, Johanna; Hu, Sanming.

2017 International Applied Computational Electromagnetics Society Symposium in China, ACES-China 2017. IEEE, 2017.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**New Evidence for the Mechanism of Action of a Type-2 Diabetes Drug Using a Magnetic Bead-Based Automated Biosensing Platform.** / Uddin, Rokon; Nur-E-Habiba, N.; Rena, Graham; Hwu, En Te; Boisen, Anja.

In: ACS Sensors, Vol. 2, No. 9, 22.09.2017, p. 1329-1336.

Research output: Contribution to journal > Article > Scientific > peer-review

**Binary Non-Negative Matrix Deconvolution for Audio Dictionary Learning.** / Drgas, Szymon; Virtanen, Tuomas; Lücke, Jörg; Hurmalainen, Antti.

In: IEEE/ACM Transactions on Audio Speech and Language Processing, Vol. 25, No. 8, 01.08.2017, p. 1644-1656.

Research output: Contribution to journal > Article > Scientific > peer-review

**Monitoring pH, temperature and humidity in long-term stem cell culture in CO<sub>2</sub> incubator.** / Rajan, Dhanesh Kattippambil; Verho, Jarmo; Kreutzer, Joose; Valimäki, Hannu; Ihalainen, Heimo; Lekkala, Jukka; Patrikoski, Mimmi; Miettinen, Susanna.

2017 IEEE International Symposium on Medical Measurements and Applications (MeMeA). IEEE, 2017. p. 470-474.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**Developing curiosity and multimedia skills with programming experiments.** / Henno, J.; Jaakkola, H.; Mäkelä, J.

2017 40th International Convention on Information and Communication Technology, Electronics and Microelectronics, MIPRO 2017 - Proceedings. IEEE, 2017. p. 694-699.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**Open data based value networks : Finnish examples of public events and agriculture.** / Linna, P.; Mäkinen, T.; Yrjönkoski, K.

2017 40th International Convention on Information and Communication Technology, Electronics and Microelectronics, MIPRO 2017 - Proceedings. IEEE, 2017. p. 1448-1453.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**The educators' telescope to the future of technology.** / Jaakkola, H.; Henno, J.; Thalheim, B.; Mäkelä, J.

2017 40th International Convention on Information and Communication Technology, Electronics and Microelectronics, MIPRO 2017 - Proceedings. IEEE, 2017. p. 660-665.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**Today is the future of yesterday; What is the future of today?** / Jaakkola, H.; Henno, J.; Mäkelä, J.; Thalheim, B.

2017 40th International Convention on Information and Communication Technology, Electronics and Microelectronics, MIPRO 2017 - Proceedings. IEEE, 2017. p. 635-643.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**Introduction to the Special Section on Sound Scene and Event Analysis.** / Richard, G.; Virtanen, T.; Bello, J. P.; Ono, N.; Glotin, H.

In: IEEE/ACM Transactions on Audio Speech and Language Processing, Vol. 25, No. 6, 01.06.2017, p. 1169-1171.

Research output: Contribution to journal > Article > Scientific

**Secure and connected wearable intelligence for content delivery at a mass event : A case study.** / Ometov, Aleksandr; Solomitchii, Dmitrii; Olsson, Thomas; Bezzateev, Sergey; Shchesniak, Anna; Andreev, Sergey; Harju, Jarmo; Koucheryavy, Yevgeni.

In: Journal of Sensor and Actuator Networks, Vol. 6, No. 2, 5, 01.06.2017.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Joint-Space Kinematic Model for Gravity-Referenced Joint Angle Estimation of Heavy-Duty Manipulators.** / Vihonen, Juho ; Mattila, Jouni; Visa, Ari.

In: IEEE Transactions on Instrumentation and Measurement, Vol. 66, No. 12, 2017, p. 3280-3288.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Non-destructive and wireless monitoring of biodegradable polymers.** / Salpavaara, Timo; Hänninen, Aleksii; Antniemi, Anni ; Leikkala, Jukka; Kellomäki, Minna.

In: Sensors and Actuators B: Chemical, Vol. 251, 2017, p. 1018-1025.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Structural characterization, spectroscopic, thermal, AC conductivity and dielectric properties and antimicrobial studies of  $(C_8H_{12}N)_2[SnCl_6]$ .** / Mathlouthi, Maha; Valkonen, Arto; Rzaigui, Mohamed; Smirani, Wajda.

In: PHASE TRANSITIONS, Vol. 90, No. 4, 2017, p. 399-414.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Blind Separation of Audio Mixtures Through Nonnegative Tensor Factorization of Modulation Spectrograms.** / Barker, Tom ; Virtanen, Tuomas.

In: IEEE-ACM transactions on audio speech and language processing, Vol. 24, No. 12, 01.12.2016, p. 2377-2389.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Adaptive multiresolution method for MAP reconstruction in electron tomography.** / Acar, Erman; Peltonen, Sari; Ruotsalainen, Ulla.

In: Ultramicroscopy, Vol. 170, 01.11.2016, p. 24-34.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Measurement of sensitivity distribution map of a ferroelectric polymer film.** / Rajala, Satu; Paajanen, Mika; Leikkala, Jukka.

In: IEEE Sensors Journal, Vol. 16, No. 23, 27.09.2016, p. 8517-8522.  
Research output: Contribution to journal › Article › Scientific › peer-review

**Electromagnetism and cross-disciplinary problems.** / Kettunen, Lauri; Kovanen, Tuomas.

2016 URSI International Symposium on Electromagnetic Theory, EMTS 2016. IEEE, 2016. p. 500-501.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Texture region detection by trained neural network.** / Naumenko, A.; Krivenko, S.; Lukin, V.; Egiazarian, Karen.

9th International Kharkiv Symposium on Physics and Engineering of Microwaves, Millimeter and Submillimeter Waves, MSMW 2016. IEEE, 2016.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Frequency domain penetration loss in the terahertz band.** / Kokkonen, Joonas; Lehtomäki, Janne; Petrov, Vitaly; Moltchanov, Dmitri; Juntti, Markku.

2016 Global Symposium on Millimeter Waves (GSMM) & ESA Workshop on Millimetre-Wave Technology and Applications . IEEE, 2016.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**On prediction of DCT-based denoising efficiency under spatially correlated noise conditions.** / Rubel, Oleksii; Lukin, Vladimir; Egiazarian, Karen.

2016 13th International Conference on Modern Problems of Radio Engineering, Telecommunications and Computer Science (TCSET) . IEEE, 2016. p. 750-754.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Microwave assisted laser-induced breakdown spectroscopy at ambient conditions.** / Viljanen, Jan; Sun, Zhiwei; Alwahabi, Zeyad T.

In: Spectrochimica Acta Part B: Atomic Spectroscopy, Vol. 118, 01.04.2016, p. 29-36.

Research output: Contribution to journal › Article › Scientific › peer-review

**Amplifier similariton laser with extra-broad bandwidth output pulse.** / Korobko, D. A.; Okhotnikov, O. G.; Zolotovskii, I. O.  
In: Laser Physics Letters, Vol. 13, No. 3, 035106, 01.03.2016.

Research output: Contribution to journal › Article › Scientific › peer-review

**Piezoresistive natural rubber-multiwall carbon nanotube nanocomposite for sensor applications.** / Selvan, N. Tamil; Eshwaran, S. B.; Das, A.; Stöckelhuber, K. W.; Wießner, S.; Pötschke, P.; Nando, G. B.; Chervanyov, A. I.; Heinrich, G.  
In: Sensors and Actuators, A: Physical, Vol. 239, 01.03.2016, p. 102-113.

Research output: Contribution to journal › Article › Scientific › peer-review

**High performance corrosion resistant coatings by novel coaxial cold- and hot-wire laser cladding methods.** / Pajukoski, H.; Näkki, J.; Thieme, S.; Tuominen, J.; Nowotny, S.; Vuoristo, P.

In: Journal of Laser Applications, Vol. 28, No. 1, 012011, 2016.

Research output: Contribution to journal › Article › Scientific › peer-review

**Metrics for polyphonic sound event detection.** / Mesaros, Annamaria; Heittola, Toni; Virtanen, Tuomas.

In: Applied Sciences, Vol. 6, No. 6, 162, 2016.

Research output: Contribution to journal › Article › Scientific › peer-review

**Evaluating transparent liquid screen overlay as a haptic conductor : Method of enhancing touchscreen based user interaction by a transparent deformable liquid screen overlay.** / Farooq, A.; Evreinov, G.; Raisamo, R.; Takahata, D.  
2015 IEEE SENSORS - Proceedings. Institute of Electrical and Electronics Engineers Inc., 2015. 7370186.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Inkjet-printed dual microfluidic-based sensor integrated system.** / Su, W.; Cooper, J. R.; Cook, B. S.; Tentzeris, M. M.; Mariotti, C.; Roselli, L.

2015 IEEE SENSORS - Proceedings. Institute of Electrical and Electronics Engineers Inc., 2015. 7370300.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Rapid and sensitive detection of norovirus antibodies in human serum with a bilayer interferometry biosensor.** / Auer, Sanna; Koho, Tiia; Uusi-Kerttula, Hanni; Vesikari, Timo; Blazevic, Vesna; Hytönen, Vesa P.

In: Sensors and Actuators B: Chemical, Vol. 221, 31.12.2015, p. 507-514.

Research output: Contribution to journal › Article › Scientific › peer-review

**RFID-Based Wireless Passive Sensors Utilizing Cork Materials.** / Gonçalves, Ricardo; Rima, Sergi; Magueta, Roberto; Pinho, Pedro; Collado, Ana; Georgiadis, Apostolos; Hester, Jimmy; Carvalho, Nuno Borges; Tentzeris, Manos M.

In: IEEE Sensors Journal, Vol. 15, No. 12, 7222363, 01.12.2015, p. 7242-7251.

Research output: Contribution to journal › Article › Scientific › peer-review

**Coupled dictionaries for exemplar-based speech enhancement and automatic speech recognition.** / Baby, Deepak; Virtanen, Tuomas; Gemmeke, Jort F.; Van hamme, Hugo.

In: Ieee-Acm transactions on audio speech and language processing, Vol. 23, No. 11, 01.11.2015, p. 1788-1799.

Research output: Contribution to journal › Article › Scientific › peer-review

**Sensitivity modeling of an RFID-based strain-sensing antenna with dielectric constant change.** / Yi, Xiaohua; Wu, Terence; Wang, Yang; Tentzeris, Manos M.

In: IEEE Sensors Journal, Vol. 15, No. 11, 7152827, 01.11.2015, p. 6147-6155.

Research output: Contribution to journal › Article › Scientific › peer-review

**Noncontact Respiration Monitoring during Sleep with Microwave Doppler Radar.** / Zakrzewski, Mari; Vehkaoja, Antti; Joutsen, Atte S.; Palovuori, Karri T.; Vanhala, Jukka J.

In: IEEE Sensors Journal, Vol. 15, No. 10, 01.10.2015, p. 5683-5693.

Research output: Contribution to journal › Article › Scientific › peer-review

**Circularly polarized shorted ring slot rectenna with a mesh design for optimized inkjet printing on paper substrate.** / Martinez, R.; Kimionis, John; Georgiadis, A.; Collado, A.; Tentzeris, M.; Goussetis, G.; Tornero, J. L.  
2015 9th European Conference on Antennas and Propagation, EuCAP 2015. Institute of Electrical and Electronics Engineers Inc., 2015. 7228814.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**Humidity passive sensors based on UHF RFID using cork dielectric slabs.** / Goncalves, Ricardo; Pinho, Pedro; Carvalho, Nuno Borges; Tentzeris, Manos M.  
2015 9th European Conference on Antennas and Propagation, EuCAP 2015. Institute of Electrical and Electronics Engineers Inc., 2015. 7228346.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**Low-cost microfluidics-enabled tunable loop antenna using inkjet-printing technologies.** / Su, Wenjing; Cook, Benjamin S.; Tentzeris, Manos M.  
2015 9th European Conference on Antennas and Propagation, EuCAP 2015. Institute of Electrical and Electronics Engineers Inc., 2015. 7228990.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**Improving reliability for classification of metallic objects using a WTMD portal.** / Makkonen, J.; Marsh, L. A.; Vihonen, J.; Järvi, A.; Armitage, D. W.; Visa, A.; Peyton, A. J.

In: Measurement Science and Technology, Vol. 26, No. 10, 105103, 26.08.2015.

Research output: Contribution to journal > Article > Scientific > peer-review

**Optimal emission enhancement in orthogonal double-pulse laser-induced breakdown spectroscopy.** / Sanginés, R.; Contreras, V.; Sobral, H.; Robledo-Martinez, A.

In: Spectrochimica Acta Part B: Atomic Spectroscopy, Vol. 110, 4935, 06.07.2015, p. 139-145.

Research output: Contribution to journal > Article > Scientific > peer-review

**Passive resonance sensor based method for monitoring particle suspensions.** / Salpavaara, Timo; Järveläinen, Matti; Seppälä, Sari; Yli-Hallila, Teemu; Verho, Jarmo; Viikko, Matti; Lekkala, Jukka; Levänen, Erkki.

In: Sensors and Actuators B: Chemical, Vol. 219, 08.06.2015, p. 324-330.

Research output: Contribution to journal > Article > Scientific > peer-review

**Development of Low Cost, Wireless, Inkjet Printed Microfluidic RF Systems and Devices for Sensing or Tunable Electronics.** / Mariotti, Chiara; Su, Wenjing; Cook, Benjamin S.; Roselli, Luca; Tentzeris, Manos M.

In: IEEE Sensors Journal, Vol. 15, No. 6, 6966729, 01.06.2015, p. 3156-3163.

Research output: Contribution to journal > Article > Scientific > peer-review

**Low-cost inkjet-printed fully passive RFID tags for calibration-free capacitive/haptic sensor applications.** / Kim, Sangkil; Kawahara, Yoshihiro; Georgiadis, Apostolos; Collado, Ana; Tentzeris, Manos M.

In: IEEE Sensors Journal, Vol. 15, No. 6, 6945328, 01.06.2015, p. 3135-3145.

Research output: Contribution to journal > Article > Scientific > peer-review

**Dilute nitride SOAs for high-speed data processing in variable temperature conditions.** / Giannoulis, G.; Korpijärvi, V. M.; Iliadis, N.; Mäkelä, J.; Viheriälä, J.; Apostolopoulos, D.; Guina, M.; Avramopoulos, H.

Optical Fiber Communication Conference, OFC 2015. OSA - The Optical Society, 2015.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**Light beam hysteresis in liquid crystals.** / Piccardi, Armando; Alberucci, Alessandro; Kravets, Nina; Assanto, Gaetano; Buchnev, Oleksandr; Kaczmarek, Malgosia.

2014 Fotonica AEIT Italian Conference on Photonics Technologies, Fotonica AEIT 2014. IEEE COMPUTER SOCIETY PRESS, 2014. 6843888.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**RFID-based sensors for zero-power autonomous wireless sensor networks.** / Cook, Benjamin S.; Vyas, Rushi; Kim, Sangkil; Thai, Trang; Le, Taoran; Traille, Anya; Aubert, Herve; Tentzeris, Manos M.

In: IEEE Sensors Journal, Vol. 14, No. 8, 6701187, 2014, p. 2419-2431.



Research output: Contribution to journal › Article › Scientific › peer-review

**Development of a constant dilution sampling system for particulate and gaseous pollutant measurements.** / Tzamkiozis, T.; Ntziachristos, L.; Amanatidis, S.; Niemelä, V.; Ukkonen, A.; Samaras, Z.  
In: Measurement Science and Technology, Vol. 24, No. 8, 085801, 08.2013.

Research output: Contribution to journal › Article › Scientific › peer-review

**Polarization control of the bound state of a vector soliton.** / Gumenyuk, R.; Okhotnikov, O. G.

In: Laser Physics Letters, Vol. 10, No. 5, 055111, 05.2013, p. 1-3.

Research output: Contribution to journal › Article › Scientific › peer-review

**160W single-frequency laser based on active tapered double-clad fiber amplifier.** / Trikshev, A. I.; Kurkov, A. S.; Tsvetkov, V. B.; Filatova, S. A.; Kertulla, J.; Filippov, V.; Chamorovskiy, Y. K.; Okhotnikov, O. G.  
Optics InfoBase Conference Papers. 2013.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Ambient rf energy harvesting sensor device with capacitor-leakage-aware duty cycle control.** / Shigeta, Ryo; Sasaki, Tatsuya; Quan, Duong Minh; Kawahara, Yoshihiro; Vyas, Rushi J.; Tentzeris, Manos M.; Asami, Tohru.  
In: IEEE Sensors Journal, Vol. 13, No. 8, 6521342, 2013, p. 2973-2983.

Research output: Contribution to journal › Article › Scientific › peer-review

**Detection of KC1 and KOH using collinear photofragmentation and atomic absorption spectroscopy.** / Sorvajarvi, T.; Rossi, J.; Toivonen, J.

The European Conference on Lasers and Electro-Optics, CLEO\_Europe 2013. 2013.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Cysteine-tagged chimeric avidin forms high binding capacity layers directly on gold.** / Vikholm-Lundin, Inger; Auer, Sanna; Paakkunainen, Maija; Määttä, Juha A E; Munter, Tony; Leppiniemi, Jenni; Hytönen, Vesa P.; Tappura, Kirsi.

In: Sensors and Actuators B: Chemical, Vol. 171-172, 08.2012, p. 440-448.

Research output: Contribution to journal › Article › Scientific › peer-review

**Design and development of a novel passive wireless ultrasensitive RF temperature transducer for remote sensing.** / Thai, Trang T.; Mehdi, Jatlaoui M.; Chebila, Franck; Aubert, Hervé; Pons, Patrick; Dejean, Gerald R.; Tentzeris, Manos M.; Plana, Robert.

In: IEEE Sensors Journal, Vol. 12, No. 9, 6208808, 2012, p. 2756-2766.

Research output: Contribution to journal › Article › Scientific › peer-review

**Third order nonlinear optical response of TTF-based molecular corners.** / Iliopoulos, Konstantinos; Czapllicki, Robert; Ouazzani, Hasnaa El; Balandier, Jean-Yves; Chas, Marcos; Goeb, Sébastien; Sallé, Marc; Gindre, Denis; Sahraoui, Bouchta.

In: Nonlinear Optics, Quantum Optics, Vol. 43, No. 1-4, 2012, p. 205-212.

Research output: Contribution to journal › Article › Scientific › peer-review

**Detection of 3,4-methylenedioxymethamphetamine (MDMA, ecstasy) by displacement of antibodies.** / Vikholm-Lundin, Inger; Auer, Sanna; Hellgren, Ann Charlotte.

In: Sensors and Actuators B: Chemical, Vol. 156, No. 1, 10.08.2011, p. 28-34.

Research output: Contribution to journal › Article › Scientific › peer-review

**Measurement of the refractive index dispersion of As<sub>2</sub>Se<sub>3</sub> bulk glass and thin films prior to and after laser irradiation and annealing using prism coupling in the near- and mid-infrared spectral range.** / Carlie, N.; Anheier, N. C.; Qiao, H. A.; Bernacki, B.; Phillips, M. C.; Petit, L.; Musgraves, J. D.; Richardson, K.

In: Review of Scientific Instruments, Vol. 82, No. 5, 053103, 05.2011.

Research output: Contribution to journal › Article › Scientific › peer-review

**Dark solitons in nematic liquid crystals.** / Piccardi, A.; Alberucci, A.; Assanto, G.; Tabiryan, N.

Optics InfoBase Conference Papers. 2011.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Directional selectivity through the subwavelength slit in metallic gratings.** / Cakmakyapan, Semih; Caglayan, Humeyra; Serebryannikov, Andriy; Ozbay, Ekmel.

CLEO: Applications and Technology. 2011.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Directional selectivity through the subwavelength slit in metallic gratings.** / Cakmakyapan, Semih; Caglayan, Humeyra; Serebryannikov, Andriy; Ozbay, Ekmel.

CLEO: Science and Innovations 2011. 2011.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Directional selectivity through the subwavelength slit in metallic gratings.** / Cakmakyapan, Semih; Caglayan, Humeyra; Serebryannikov, Andriy; Ozbay, Ekmel.

Quantum Electronics and Laser Science Conference, QELS 2011. 2011.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Inkjet printed, self powered, wireless sensors for environmental, gas, and authentication-based sensing.** / Vyas, Rushi; Lakafosis, Vasileios; Lee, Hoseon; Shaker, George; Yang, Li; Orecchini, Giulia; Traille, Anya; Tentzeris, Manos M.; Roselli, Luca.

In: IEEE Sensors Journal, Vol. 11, No. 12, 6008617, 2011, p. 3139-3152.

Research output: Contribution to journal › Article › Scientific › peer-review

**Multimode waveguides in nematic liquid crystals.** / Izdebskaya, Yana V.; Desyatnikov, Anton S.; Assanto, Gaetano; Kivshar, Yuri S.

Conference on Lasers and Electro-Optics/Pacific Rim, CLEOPR 2011. 2011. p. 1912-1913.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Self-assembled monolayers (SAMs) of porphyrin deposited inside solid-core photonic crystal fibre (SCPCF).** / Veselov, A.; Efimov, A.; Chamorovskiy, A.; Okhotnikov, O.; Kosolapov, A.; Levchenko, A.; Lemmetyinen, H.; Tkachenko, N.

Access Networks and In-house Communications, ANIC 2011. 2011.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Spatial solitons carrying phase singularities in nematic liquid crystals.** / Izdebskaya, Yana V.; Desyatnikov, Anton S.; Assanto, Gaetano; Kivshar, Yuri.

Conference on Lasers and Electro-Optics/Pacific Rim, CLEOPR 2011. 2011. p. 444-445.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Spatial solitons in a self-focusing medium with tunable nonlinearity.** / Piccardi, Armando; Alberucci, Alessandro; Assanto, Gaetano; Kaczmarek, Malgosia.

Optics InfoBase Conference Papers. 2011.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Theory of near-IR metatronic nanocircuits using transparent conducting oxides (TCO).** / Caglayan, Humeyra; Engheta, Nader.

Frontiers in Optics 2011. Optical Society of America, 2011.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Third harmonic generation enhancement in nematic liquid crystals via nonlocal solitons propagation.** / Peccianti, M.; Pasquazi, A.; Assanto, G.; Morandotti, R.

CLEO: Science and Innovations, CLEO\_SI 2011. 2011.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Nematicon routing in liquid crystal light valve.** / Piccardi, A.; Alberucci, A.; Bortolozzo, U.; Residori, S.; Assanto, G.

Optics InfoBase Conference Papers. 2010.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Soliton self-deflection via power-dependent walk-off.** / Piccardi, Armando; Alberucci, Alessandro; Assanto, Gaetano.  
Optics InfoBase Conference Papers. 2010.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Routing light with nematicons : Light localization and steering in liquid crystals.** / Assanto, Gaetano; Peccianti, Marco; Alberucci, Alessandro; Piccardi, Armando.

Optics InfoBase Conference Papers. Optical Society of America, 2009. p. 2281-2282.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Single KTiOPO4 nanocrystals for nonlinear probing of local optical fields and interaction with a metallic nanostructure.** / Le Xuan, L.; Slablab, A.; Zhou, C.; Chauvat, D.; De Wilde, Y.; Perruchas, S.; Tard, C.; Gacoin, T.; Villeval, P.; Roch, J. F.  
Optics InfoBase Conference Papers. Optical Society of America, 2009.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Observation of defect formation in metamaterials.** / Caglayan, Humeyra; Bulu, Irfan; Loncar, Marko; Ozbay, Ekmel.  
Plasmonics and Metamaterials 2008. Optical Society of America, 2008. MMC7.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**High power fiber lasers.** / Nilsson, J.; Sahu, J. K.; Jeong, Y.; Filippov, V. N.; Soh, D. B S; Codemard, C. A.; Dupriez, P.; Kim, J.; Richardson, D. J.; Malinowski, A.; Piper, A. N.; Price, J. H V; Furusawa, K.; Clarkson, W. A.; Payne, D. N.  
Optics InfoBase Conference Papers. Optical Society of America, 2006.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Highly directive radiation and negative refraction using photonic crystals.** / Ozbay, E.; Bulu, I.; Aydin, K.; Caglayan, H.; Alici, K. B.; Guven, K.

In: Laser Physics, Vol. 15, No. 2, 02.2005, p. 217-224.

Research output: Contribution to journal › Article › Scientific › peer-review

**Fluid Transmission Line Modeling Using a Variational Method.** / Mäkinen, Jari; Piché, Robert; Ellman, Asko.

In: Journal of Dynamic Systems, Measurement and Control: Transactions of the ASME, Vol. 122, No. 1, 03.2000, p. 153-162.

Research output: Contribution to journal › Article › Scientific › peer-review

**Round Robin computer simulation of ejection probability in sputtering.** / Sigmund, P.; Robinson, M. T.; Baskes, M. I.; Hautala, M.; Cui, F. Z.; Eckstein, W.; Yamamura, Y.; Hosaka, S.; Ishitani, T.; Shulga, V. I.; Harrison, D. E.; Chakarov, I. R.; Karpuzo, D. S.; Kawatoh, E.; Shimizu, R.; Valkealahti, S.; Nieminen, R. M.; Betz, G.; Husinsky, W.; Shapiro, M. H.; Vicaneck, M.; Urbassek, H. M.

In: Nuclear Inst. and Methods in Physics Research, B, Vol. 36, No. 2, 01.02.1989, p. 110-123.

Research output: Contribution to journal › Article › Scientific › peer-review

**Ranges and stopping power of KeV electrons in the solid hydrogens.** / Valkealahti, S.; Schou, J.; Sørensen, H.; Nieminen, R. M.

In: Nuclear Inst. and Methods in Physics Research, B, Vol. 34, No. 3, 01.01.1988, p. 321-331.

Research output: Contribution to journal › Article › Scientific › peer-review

**Molecular dynamics simulation of the damage production in Al (110) surface with slow argon ions.** / Valkealahti, S.; Nieminen, R. M.

In: Nuclear Inst. and Methods in Physics Research, B, Vol. 18, No. 1-6, 01.01.1986, p. 365-369.

Research output: Contribution to journal › Article › Scientific › peer-review