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2020

Monitoring with In Vivo Electrochemical Sensors: Navigating the Complexities of Blood and Tissue Reactivity.

Vadgama P. *Sensors (Basel)* vol. 20, (11).

Near infrared spectrometric investigation of lactate in a varying pH buffer.

Baishya N, Momouei M, Budidha K, Qassem M, Vadgama P and Kyriacou PA. *Journal of Near Infrared Spectroscopy*. Sage Publications.

2019

One-year stability of glucose dehydrogenase confined in a 3D carbon nanotube electrode with coated poly-methylene green: Application as bioanode for a glucose biofuel cell.

Tahar AB, Szymczyk A, Tingry S, Vadgama P, Zelsmanne M, Tsujumura S, Cinquin P, Martin D and Zebda A. *Journal of Electroanalytical Chemistry* vol. 847,.

An electrochemical study of acrylate bone adhesive permeability and selectivity change during in vitro ageing: a model approach to the study of biomaterials and membrane barriers.

VADGAMA PM. *Analytica Chimica Acta*. Elsevier Masson.

Multifunctional biosensor development and manufacture.

Vadgama P. *Comprehensive Biotechnology*.

2018

Challenges for successful implantation of biofuel cells.

Zebda A, Alcaraz JP, Vadgama P, Shleev S, Minter SD, Boucher F, Cinquin P and Martin DK. *Bioelectrochemistry* vol. 124, 57-72.

New directions in membrane designs for biosensors.

Lopes IC, Zebda A and Vadgama P. *Current Opinion in Electrochemistry* vol. 12, 107-112.

Bifunctional aptamer-mediated catalytic hairpin assembly for the sensitive and homogenous detection of rare cancer cells.

Liu J, Zhang Y, Zhao Q, Situ B, Zhao J, Luo S, Li B, Yan X, Vadgama P, Su L, Ma W, Wang W and Zheng L. *Anal Chim Acta* vol. 1029, 58-64.

High temporal resolution delayed analysis of clinical microdialysate streams.

Gowers SAN, Hamaoui K, Cunnea P, Anastasova S, Curto VF, Vadgama P, Yang G-Z, Papalois V, Drakakis EM, Fotopoulou C, Weber SG and Boutelle MG. *Analyst* vol. 143, (3) 715-724.

2017

An electrochemical study of microporous track-etched membrane permeability and the effect of surface protein layers.

Adatia K, Raja M and Vadgama P. *Colloids Surf B Biointerfaces* vol. 158, 84-92.

Materials for improved point of care biosensor-tissue interfaces.

Vadgama P. *Medical Biosensors For Point of Care (Poc) Applications*.

2016

Nanoscience and Nanotechnology and the Armory for the Twenty-First Century Health Care.

Van de Voorde M and Vadgama P. *Nanoscience and Nanotechnology For Human Health*.

Microfluidics a potent route to sample delivery for non-intrusive sensors.

Kyriacou G, Chang H, Gargiuli J, Agarwal A and Vadgama P. *Advanced Sciences and Technologies For Security Applications*.

2015

Electrochemical determination of microRNAs based on isothermal strand-displacement polymerase reaction coupled with multienzyme functionalized magnetic micro-carriers.

Ma W, Situ B, Lv W, Li B, Yin X, Vadgama P, Zheng L and Wang W. *Biosensors and Bioelectronics* vol. 80, 344-351.

3D Printed Microfluidic Device with Integrated Biosensors for Online Analysis of Subcutaneous Human Microdialysate.

Gowers SAN, Curto VF, Seneci CA, Wang C, Anastasova S, Vadgama P, Yang GZ and Boutelle MG. *Analytical Chemistry* vol. 87, (15) 7763-7770.

Assessing the carcinogenic potential of low-dose exposures to chemical mixtures in the environment: The challenge ahead.

Goodson WH, Lowe L, Carpenter DO, Gilbertson M, Ali AM, de Cerain Salsamendi AL, Lasfar A, Carnero A, Azqueta A, Amedei A, Charles AK, Collins AR, Ward A, Salzberg AC, Colacci A, Olsen AK, Berg A, Barclay BJ, Zhou BP, Blanco-Aparicio C, Bagloli CJ, Dong C, Mondello C, Hsu CW, Naus CC, Yedjou C, Curran CS, Laird DW, Koch DC and Carlin DJ. *Carcinogenesis* vol. 36, S254-S296.

The potential for chemical mixtures from the environment to enable the cancer hallmark of sustained proliferative signalling.

Engström W, Darbre P, Eriksson S, Gulliver L, Hultman T, Karamouzis MV, Klaunig JE, Mehta R, Moorwood K, Sanderson T, Sone H, Vadgama P, Wagemaker G, Ward A, Singh N, Al-Mulla F, Al-Temaimi R, Amedei A, Colacci AM, Vaccari M, Mondello C, Ivana Scovassi A, Raju J, Hamid RA, Memeo L, Forte S, Roy R, Woodrick J, Salem HK and Ryan E. *Carcinogenesis* vol. 36, S38-S60.

2014

Surface modification of titanium plate enhanced fibronectin-mediated adhesion and proliferation of MG-63 cells.

Zhou Z, Dai Y, Liu BB, Xia LL, Liu HB, Vadgama P and Liu HR. *Transactions of Nonferrous Metals Society of China (English Edition)* vol. 24, (4) 1065-1071.

Electropolymerised Phenolic Films as Internal Barriers for Oxidase Enzyme Biosensors.

Spehar-Deláze AM, Anastasova S and Vadgama P. *Electroanalysis* vol. 26, (6) 1335-1344.

2013

Antimicrobial, mechanical and thermal studies of silver particle-loaded polyurethane.

Paul D, Paul S, Roopour N, Wilks M and Vadgama P. *J Funct Biomater* vol. 4, (4) 358-375.

Barrier membrane protected in vivo biosensors.

Anastasova S, Spehar-Deleze AM and Vadgama P. *European Cells and Materials* vol. 26, (SUPPL.6).

Silver surface-enhanced Raman scattering substrates prepared by a nanofabrication process using Electron Beam Lithography and magnetron sputtering.

Zhang W, Nan P, Lu BR, Chen Y, Vadgama P and Qu XP. *Proceedings of The Ieee Conference On Nanotechnology* 1220-1223.

Wearable electronic sensor for potentiometric and amperometric measurements.

Bembnowicz P, Yang GZ, Anastasova S, Spehar-Del'Áze AM and Vadgama P. *2013 Ieee International Conference On Body Sensor Networks, Bsn 2013*.

Chemosensors and biosensors based on polyelectrolyte microcapsules containing fluorescent dyes and enzymes.

Kazakova LI, Shabarchina LI, Anastasova S, Pavlov AM, Vadgama P, Skirtach AG and Sukhorukov GB. *Analytical and Bioanalytical Chemistry* vol. 405, (5) 1559-1568.

Characterization of thin films and membranes.

Vadgama P and Mandler D. *Analytical and Bioanalytical Chemistry* vol. 405, (5) 1433-1434.

Integrated chemistries for analytical simplification and point of care testing.

Vadgama P, Anastasova S and Spehar-Deleze A. *Rsc Detection Science* 35-64.

Packaging and coating materials for implantable devices.

Wasikiewicz JM, Roohpour N and Vadgama P.

2012

Oxygen detection using different types of membranes deposited on needle based platforms.

Anastasova S, Spehar-Del'Áze AM and Vadgama P. *Ecs Transactions* vol. 41, (20) 43-48.

General platform for in Vivo sensors for oxygen, glucose and lactate monitoring.

Spehar-Del'Áze AM, Anastasova S, Rong Z, Bickham D, Chang H and Vadgama P. *Nato Science For Peace and Security Series a: Chemistry and Biology* 287-303.

Stabilised Biosensing Using Needle-Based Recess Electrodes.

Anastasova S, Spehar-Deleze A-M, Bickham D, Uebel P, Schmidt M, Russell P and Vadgama P. *Electroanalysis* vol. 24, (3) 529-538.

Development of bacterially resistant polyurethane for coating medical devices.

Roohpour N, Moshaverinia A, Wasikiewicz JM, Paul D, Wilks M, Millar M and Vadgama P. *Biomed Mater* vol. 7, (1).

Circadian Disruption and Remedial Interventions Effects and Interventions for Jet Lag for Athletic Peak Performance.

Forbes-Robertson S, Dudley E, Vadgama P, Cook C, Drawer S and Kilduff L. *Sports Medicine* vol. 42, (3) 185-208.

Chemosensors and biosensors based on polyelectrolyte microcapsules containing fluorescent dyes and enzymes.

Kazakova LI, Shabarchina LI, Anastasova S, Pavlov AM, Vadgama P, Skirtach AG and Sukhorukov GB. *Analytical and Bioanalytical Chemistry* 1-10.

Characterization of thin films and membranes.

Vadgama P and Mandler D. *Analytical and Bioanalytical Chemistry* 1-2.

Oxygen diffusion through collagen scaffolds at defined densities: implications for cell survival in tissue models.

Cheema U, Rong Z, Kirresh O, MacRobert AJ, Vadgama P and Brown RA. *J Tissue Eng Regen Med* vol. 6, (1) 77-84.

2011

Fabrication of biomaterials via controlled protein bubble generation and manipulation.

Ekemen Z, Chang H, Ahmad Z, Bayram C, Rong Z, Denkbaz EB, Stride E, Vadgama P and Edirisinghe M. *Biomacromolecules* vol. 12, (12) 4291-4300.

Multifunctional Biosensor Development and Manufacture.

Vadgama P. *Comprehensive Biotechnology, Second Edition*.

Isopropyl Myristate Modified Silicone as a Potential New Encapsulating Material for Implantable Devices.

Wasikiewicz JM, Paul D, Roohpour N, Vaghela J, Grahn MF and Vadgama P. *J Appl Polym Sci* vol. 119, (5) 2917-2924.

Concluding remarks.

Vadgama P. *Faraday Discussions* vol. 149, 357-364.

Clinical context and fundamental advances: the need to build linkages.

Vadgama P. *Faraday Discuss* vol. 149, 357-364.

2010

Both sides nanopatterned tubular collagen scaffolds as tissue-engineered vascular grafts.

Zorlutuna P, Vadgama P and Hasirci V. *J Tissue Eng Regen M* vol. 4, (8) 628-637.

Bio-sensing using recessed gold-filled capillary amperometric electrodes.

Kacanovska A, Rong Z, Schmidt M, Russell PSJ and Vadgama P. *Analytical and Bioanalytical Chemistry* vol. 398, (4) 1687-1694.

Focus on sensor interfaces.

Vadgama P. *Anal Bioanal Chem* vol. 398, (4) 1543-1544.

Polyurethane membranes modified with isopropyl myristate as a potential candidate for encapsulating electronic implants: A study of biocompatibility and water permeability.

Roohpour N, Wasikiewicz JM, Moshaverinia A, Paul D, Grahn MF, Rehman IU and Vadgama P. *Polymers* vol. 2, (3) 102-119.

Study of albumin and fibrinogen membranes formed by interfacial crosslinking using microfluidic flow.

Chang H, Khan R, Rong Z, Sapelkin A and Vadgama P. *Biofabrication* vol. 2, (3).

Modulation of cell growth on exposure to silkworm and spider silk fibers.

Hakimi O, Gheysens T, Vollrath F, Grahn MF, Knight DP and Vadgama P. *J Biomed Mater Res A* vol. 92, (4) 1366-1372.

2009

Isopropyl Myristate-Modified Polyether-Urethane Coatings as Protective Barriers for Implantable Medical Devices.

Roohpour N, Wasikiewicz JM, Moshaverinia A, Paul D, Rehman IU and Vadgama P. *Materials* vol. 2, (3) 719-733.

Surface plasmon resonance imaging for biosensing.

Paul S, Vadgama P and Ray AK. *Iet Nanobiotechnol* vol. 3, (3) 71-80.

Influence of nanopatterns on endothelial cell adhesion: Enhanced cell retention under shear stress.

Zorlutuna P, Rong Z, Vadgama P and Hasirci V. *Acta Biomaterialia* vol. 5, (7) 2451-2459.

Synthesis and characterisation of enhanced barrier polyurethane for encapsulation of implantable medical devices.

Roohpour N, Wasikiewicz JM, Paul D, Vadgama P and Rehman IU. *J Mater Sci Mater Med* vol. 20, (9) 1803-1814.

Impedance resonance: A novel technique for signal acquisition from interdigitated electrodes (IDE) in sensor applications.

Snyder DM and Vadgama P. *Ieee Sensors Journal* vol. 9, (2) 143-145.

Synthesis and characterisation of enhanced barrier polyurethane for encapsulation of implantable medical devices.

Roohpour N, Wasikiewicz JM, Paul D, Vadgama P and Rehman IU. *Journal of Materials Science-Materials in Medicine* vol. 20, (9) 1803-1814.

Impedance Resonance: A Novel Technique for Signal Acquisition From Interdigitated Electrodes (IDE) in Sensor Applications.

Snyder DM and Vadgama P. *Ieee Sens J* vol. 9, (1-2) 143-145.

2008

Liquid crystalline phthalocyanine thin films as nanoscale substrates for protein adsorption.

Basova T, Paul S, Paul D, Vadgama P, Gürek AG, Ahsen V and Ray AK. *Journal of Bionanoscience* vol. 2, (2) 114-118.

Sol-gel coated bioelectrodes for the selection of cells in microfluidic systems.

Popa C, Vadgama P, Candea V and Pavel C. *8th World Biomaterials Congress 2008 vol. 2.*

A test method to monitor in vitro storage and degradation effects on a skin substitute.

Ismail F, Willows A, Khurana M, Tomlins PE, James S, Mikhalovsky S and Vadgama P. *Medical Engineering and Physics vol. 30, (5) 640-646.*

Assessment of tissue scaffold degradation using electrochemical techniques.

Willows A, Fan Q, Ismail F, Vaz CM, Tomlins PE, Mikhalovska LI, Mikhalovsky SV, James SL, Vadgama P and Wasikiewicz J. *Acta Biomater vol. 4, (3) 686-696.*

In Vivo Applications: Glucose Monitoring, Fuel Cells.

Vadgama P and Schoenleber M.

Bipartite expressions for amperometric currents of recessed, membrane covered planar and hanging mercury drop electrodes.

Rong ZM and Vadgama P. *J Electroanal Chem vol. 614, (1-2) 166-170.*

Development of electrochemical biosensors based on sol-gel enzyme encapsulation and protective polymer membranes.

Pauliukaite R, Schoenleber M, Vadgama P and Brett CMA. *Anal Bioanal Chem vol. 390, (4) 1121-1131.*

Detection for security.

Bell A and Vadgama P. *Analyst vol. 133, (5) 557-557.*

Editorial - Detection for security.

Bell A and Vadgama P. *Analyst vol. 133, (5).*

Needle enzyme electrode for lactate measurement in vivo.

Rong Z, Leitao E, Popplewell J, Alp B and Vadgama P. *Ieee Sensors Journal vol. 8, (1) 113-120.*

Polypyrrole incorporating biomolecules.

Day Ateh D, Charles Lillie G and Vadgama P. *International Journal of Nano and Biomaterials vol. 1, (3) 222-236.*

2007

Technology developments to initiate a next generation of Cochlear Implants.

Volckaerts B, Corless AR, Mercanzini A, Silmon AM, Bertsch A, Van Himbeek C, Wasikiewicz J, Bulcke MV, Vadgama P, Renaud P and Corless T. *Annual International Conference of The Ieee Engineering in Medicine and Biology - Proceedings 515-518.*

Impedimetric sensing of cells on polypyrrole-based conducting polymers.

Ateh DD, Waterworth A, Walker D, Brown BH, Navsaria H and Vadgama P. *J Biomed Mater Res A vol. 83, (2) 391-400.*

Biocompatible materials developments for new medical implants.

Hodgins D, Wasikiewicz JM, Grahn MF, Paul D, Roohpour N, Vadgama P, Silmon AM, Cousins B and Verdon B. *Med Device Technol vol. 18, (6) 30-35.*

Effective diffusion coefficient determination within cylindrical granules of adsorbents using a direct simulation method.

Rong ZM, Terzyk AP, Gauden PA and Vadgama P. *J Colloid Interf Sci vol. 313, (2) 449-453.*

Sensor biocompatibility: final frontier in bioanalytical measurement.

Vadgama P. *Analyst vol. 132, (6) 495-499.*

Biocomposite nanofibres and osteoblasts for bone tissue engineering.

Venugopal J, Vadgama P, Kumar TSS and Ramakrishna S. *Nanotechnology vol. 18, (5).*

Magnetic counter-gravity flow separation of electrically prepolarised lymphoid cells.

Popa C, Su B, Vadgama P and Cotter F. *Brit J Haematol vol. 136, (3) 433-438.*

Modifying surfaces and interfaces for improved biomaterial performance.

Vadgama P. *Med Device Technol* vol. 18, (1) 22-25.

Spider and mulberry silkworm silks as compatible biomaterials.

Hakimi O, Knight DP, Vollrath F and Vadgama P. *Compos Part B-Eng* vol. 38, (3) 324-337.

Preparation, characterization and applications of ultrathin cellulose acetate Langmuir-Blodgett films.

Cohen-Atiya M, Vadgama P and Mandler D. *Soft Matter* vol. 3, (8) 1053-1063.

2006

Polypyrrole-based conducting polymers and interactions with biological tissues.

Ateh DD, Navsaria HA and Vadgama P. *J R Soc Interface* vol. 3, (11) 741-752.

Bipartite expressions for diffusional mass transport in biomembranes.

Rong Z and Vadgama P. *Biophys J* vol. 91, (12) 4690-4696.

Editorial for special issue of medical engineering and physics.

Vadgama P. *Med Eng Phys* vol. 28, (10) 933-933.

Characterization of a laminar flow cell for the prevention of biosensor fouling.

Kyriacou G, Vadgama P and Wang W. *Med Eng Phys* vol. 28, (10) 989-998.

Simple expressions for diffusion coefficient determination of adsorption within spherical and cylindrical absorbents using direct simulation method.

Rong ZM and Vadgama P. *J Colloid Interf Sci* vol. 303, (1) 75-79.

In situ fabrication of cross-linked protein membranes by using microfluidics.

Nair G, Gargiuli JF, Shiju NR, Rong ZM, Shapiro E, Drikakis D and Vadgama P. *Chembiochem* vol. 7, (11) 1683-1689.

Microfluidic systems for in situ formation of nylon 6,6 membranes.

Gargiuli J, Shapiro E, Gulhane H, Nair G, Drikakis D and Vadgama P. *J Membrane Sci* vol. 282, (1-2) 257-265.

Ultrastructure of insect and spider cocoon silks.

Hakimi O, Knight DP, Knight MM, Grahn MF and Vadgama P. *Biomacromolecules* vol. 7, (10) 2901-2908.

A bipartite expression for the transient amperometric current at a membrane covered planar electrode to characterize solute diffusion through the membrane.

Rong ZM, Rashid S and Vadgama P. *Electroanal* vol. 18, (17) 1703-1709.

Dynamic simulation method to characterise oxygen transport in hydrogel membranes.

Rong Z and Vadgama P. *Biomaterials* vol. 27, (23) 4266-4268.

Microfluidic assays in practice.

Vadgama P. *Nano Today* vol. 1, (3) 56-56.

Biocompatibility - shifting priorities.

Vadgama P. *Mater World* vol. 14, (8) 21-21.

Characterisation of the nanoporous structure of collagen-glycosaminoglycan hydrogels by freezing-out of bulk and bound water.

Mikhailovska LI, Gun'ko VM, Turov VV, Zarko VI, James SL, Vadgama P, Tomlins PE and Mikhailovsky SV. *Biomaterials* vol. 27, (19) 3599-3607.

Culture of Human Keratinocytes on Polypyrrole-Based Conducting Polymers.

Vadgama P, NAVSARIA H and Ateh A. *Tissue Eng* vol. 12, (4) 645-655.

Culture of human keratinocytes on polypyrrole-based conducting polymers.

Ateh DD, Vadgama P and Navsaria HA. *Tissue Eng* vol. 12, (4) 645-655.

Microfluidic cell optimization for polymer membrane fabrication.

Shapiro E, Drikakis D, Gargiuli J and Vadgama P. *Proceedings of The 4th International Conference On Nanochannels, Microchannels and Minichannels, Icnmm2006* vol. 2006 B, 829-836.

Needle enzyme electrode based glucose diffusive transport measurement in a collagen gel and validation of a simulation model.

Rong ZM, Cheema U and Vadgama P. *Analyst* vol. 131, (7) 816-821.

2005

Surface biocompatibility.

Vadgama P. *Annual Reports On The Progress of Chemistry - Section C* vol. 101, 14-52.

Microelectrodes and biocompatible sensors for skin pO₂ measurements.

Wang W and Vadgama P.

Interaction of myofibroblasts with silk scaffolds.

Hakimi O, Grahm MF, Knight DP and Vadgama P. *European Cells and Materials* vol. 10, (SUPPL.2).

Preface.

Vadgama P. *Surfaces and Interfaces For Biomaterials*.

Tissue implanted glucose needle electrodes: early sensor stabilisation and achievement of tissue-blood correlation during the run in period.

Ahmed S, Dack C, Farace G, Rigby G and Vadgama P. *Anal Chim Acta* vol. 537, (1-2) 153-161.

Mucin/carbopol matrix to immobilize oxalate oxidase in a urine oxalate amperometric biosensor.

Capra RH, Strumia M, Vadgama PM and Baruzzi AM. *Anal Chim Acta* vol. 530, (1) 49-54.

Stable use of biosensors at the sample interface.

Gargiuli JF, Gill A, Lillie G, Schoenleber M, Pearson J, Kyriakou G and Vadgama P.

Issues concerning the use of assays of cell adhesion to biomaterials.

James SL, Mikhalovsky S, Vadgama P and Tomlins PE.

Surfaces and interfaces for biomaterials.

Vadgama P. *Surfaces and Interfaces For Biomaterials* 1-802.

On the topographical characterisation of biomaterial surfaces.

Tomlins PE, Leach R, Vadgama P, Mikhalovsky S and James S.

2004

O₂ microsensors for minimally invasive tissue monitoring.

Wang W and Vadgama P. *J Roy Soc Interface* vol. 1, (1) 109-117.

Detection of DNA hybridization on a liposome surface using ultrasound velocimetry and turbidimetry methods.

Hianik T, Rybar P, Andreev SY, Oretskaya TS and Vadgama P. *Bioorg Med Chem Lett* vol. 14, (15) 3897-3900.

O₂ microsensors for minimally invasive tissue monitoring.

VADGAMA PM and Wang W. *J.R. Soc. Interface* vol. 1, 109-117.

2003

Hybridization of DNA at the surface of phospholipid monolayers. Effect of orientation of oligonucleotide chains.

Hianik T, Vitovic P, Humenik D, Andreev SY, Oretskaya TS, Hall EAH and Vadgama P. *Bioelectrochemistry* vol. 59, (1-2) 35-40.

Voltammetric and impedance studies of inosine-5'-monophosphate and hypoxanthine.

Oliveira-Brett AM, Silva LA, Farace G, Vadgama P and Brett CMA. *Bioelectrochemistry* vol. 59, (1-2) 49-56.

Biosensors - picking up the vibes.

VADGAMA PM. *Biological Sciences Review* vol. 15, (4) 32-36.

2002

Advances in continuous in vivo glucose monitoring.

Leitao E, Kaushal K, Gill A and Vadgama P. *Diabetic Med* vol. 19, 11-13.

Entrapment of glucose oxidase in non-porous poly(vinyl chloride).

Reddy SM and Vadgama P. *Anal Chim Acta* vol. 461, (1) 57-64.

Modified microelectrode interfaces for in-line electrochemical monitoring of ethanol in fermentation processes.

Warriner K, Morrissey A, Alderman J, King G, Treloar P and Vadgama PM. *Sensor Actuat B-Chem* vol. 84, (2-3) 200-207.

A lightweight measuring device for the continuous in vivo monitoring of glucose by means of ultraslow microdialysis in combination with a miniaturised flow-through biosensor.

Rhemrev-Boom RM, Tiessen RG, Jonker AA, Venema K, Vadgama P and Korf J. *Clin Chim Acta* vol. 316, (1-2) 1-10.

Strategic issues in reliable sensing.

Gill A, Farace G, Lillie G and Vadgama P. *Bioelectrochemistry* vol. 55, (1-2) 123-125.

Reagentless biosensing using electrochemical impedance spectroscopy.

Farace G, Lillie G, Hianik T, Payne P and Vadgama P. *Bioelectrochemistry* vol. 55, (1-2) 1-3.

2001

A versatile biosensor device for continuous biomedical monitoring.

Rhemrev-Boom MM, Korf J, Venema K, Urban G and Vadgama P. *Biosensors & Bioelectronics* vol. 16, (9-12) 839-847.

Electrochemical impedance spectroscopy as a platform for reagentless bioaffinity sensing.

Lillie G, Payne P and Vadgama P. *Sensors and Actuators B-Chemical* vol. 78, (1-3) 249-256.

A rapid receptor-ligand assay determination of estrogens using surface plasmon resonance.

Pearson J, Gill A, Margison GP, Vadgama P and Povey AC. *Sensors and Actuators B-Chemical* vol. 76, (1-3) 1-7.

Amperometric detection of DNA hybridization on a gold surface depends on the orientation of oligonucleotide chains.

Hianik T, Gajdos V, Krivanek R, Oretskaya T, Metelev V, Volkov E and Vadgama P. *Bioelectrochemistry* vol. 53, (2) 199-204.

Biomedical sensors: materials.

VADGAMA PM. *Encyclopedia of Materials: Science and Technology*. Wiley.

Basic structure and functional properties of medical biosensors with special regard to biocompatibility.

VADGAMA PM and Farace G. *Biocybernetics and Biomedical Engineering* vol. 21, (4) 11-20.

2000

An enzyme electrode for extended linearity citrate measurements based on modified polymeric membranes.

Maines A, Prodromidis MI, Tzouwara-Karayanni SM, Karayannis MI, Ashworth D and Vadgama P. *Electroanal* vol. 12, (14) 1118-1123.

Novel open flow microflow sensor for reduced fouling of chemical sensors in physiological sampling environments.

Gregory CM, Hatfield JV, Higgins S, Iacovides H and Vadgama PJ. *Sensors and Actuators, B: Chemical* vol. 65, (1) 305-309.

Development of a redox mediated amperometric detection system for immunoassay. Application to urinary amphetamine screening.

Iverson FM, Kane JW, Pearson JE, Jenny K and Vadgama P. *Electroanal* vol. 12, (10) 778-785.

Reagentless enzyme electrode for malate based on modified polymeric membranes.

Maines A, Prodromidis MI, Tzouwara-Karayanni SM, Karayannis MI, Ashworth D and Vadgama P. *Anal Chim Acta* vol. 408, (1-2) 217-224.

Analytical aspects of biosensors.

Pearson JE, Gill A and Vadgama P. *Ann Clin Biochem* vol. 37 (Pt 2), 119-145.

1999

PVC as a sensor membrane material: influence of solvent casting variables.

Reddy SM and Vadgama PM. *J Mater Sci-Mater M* vol. 10, (5) 295-300.

One-dimensional modelling of foulant reduction in a microflow, amperometric-sensor system.

Higgins SW, Gregory CM, Hatfield JV, Iacovides H and Vadgama PJ. *Journal of Medical Engineering and Technology* vol. 23, (3) 102-107.

Method for reducing fouling at the sensor-sample interface.

Gregory CM, Hatfield JV, Higgins S and Vadgama PJ. *Conference Record - Ieee Instrumentation and Measurement Technology Conference* vol. 1, 365-369.

1998

Surface plasmon resonance: a study of the effect of biotinylation on the selection of antibodies for use in immunoassays.

Pearson JE, Kane JW, Petraki-Kallioti I, Gill A and Vadgama P. *J Immunol Methods* vol. 221, (1-2) 87-94.

Whole blood assay of glucose-6-phosphate dehydrogenase: potential for simplified immunoassay.

Tham SY, Pearson JE, Kane JW, Treloar PH and Vadgama PM. *Sensor Actuat B-Chem* vol. 50, (3) 204-209.

Whole blood assay of glucose-6-phosphate dehydrogenase: potential for simplified immunoassay.

Tham SY, Pearson JE, Kane JW, Treloar PH and Vadgama PM. *Sensors and Actuators, B: Chemical* vol. B50, (3) 204-209.

Development of an oxidase-based glucose sensor using thickness-shear-mode quartz crystals.

Reddy SM, Jones JP, Lewis TJ and Vadgama PM. *Anal Chim Acta* vol. 363, (2-3) 203-213.

1997

Minimally invasive glucose and lactate sensors.

Leitao E, Rigby GP, Ahmed S and Vadgama P. *Iee Colloquium (Digest)* (318).

Stability of dodecyl sulphate-doped poly(pyrrole) glucose oxidase modified electrodes exposed in human blood serum.

Warriner K, Higson S, Ashworth D, Christie I and Vadgama P. *Mat Sci Eng C-Bio S* vol. 5, (2) 81-90.

A lactate dehydrogenase amperometric pyruvate electrode exploiting direct detection of NAD(+) at a poly(3-methylthiophene): poly(phenol red) modified platinum surface.

Warriner K, Higson S and Vadgama P. *Mat Sci Eng C-Bio S* vol. 5, (2) 91-99.

Blood compatibility and extended linearity of lactate enzyme electrode using poly(vinyl chloride) outer membranes.

Kyrolainen M, Reddy SM and Vadgama PM. *Anal Chim Acta* vol. 353, (2-3) 281-289.

Bioelectrochemical determination of citric acid in real samples using a fully automated flow injection manifold.

Prodromidis MI, TzouwaraKarayanni SM, Karayannis MI and Vadgama PM. *Analyst* vol. 122, (10) 1101-1106.

A study of the permeability properties of surfactant modified poly(vinyl chloride) membranes.

Reddy SM and Vadgama PM. *Anal Chim Acta* vol. 350, (1-2) 67-76.

Surfactant-modified poly(vinyl chloride) membranes as biocompatible interfaces for amperometric enzyme electrodes.

Reddy SM and Vadgama PM. *Anal Chim Acta* vol. 350, (1-2) 77-89.

Amperometric enzyme electrode for the determination of urine oxalate.

Reddy SM, Higson SP and Vadgama PM. *Anal Chim Acta* vol. 343, (1-2) 59-68.

Infrared analysis in clinical chemistry: its use in the laboratory and in non-invasive near patient testing.

Stevens JF and Vadgama P. *Ann Clin Biochem* vol. 34 (Pt 3), 215-221.

Stability of dodecyl sulphate-doped poly(pyrrole)/glucose oxidase modified electrodes exposed in human blood serum.

Warriner K, Higson S, Ashworth D, Christie I and Vadgama P. *Materials Science and Engineering C* vol. 5, (2 C) 81-90.

A lactate dehydrogenase amperometric pyruvate electrode exploiting direct detection of NAD⁺ at a poly(3-methylthiophene):poly(phenol red) modified platinum surface.

Warriner K, Higson S and Vadgama P. *Materials Science and Engineering C* vol. 5, (2 C) 91-99.

Minimal-fouling enzyme electrode for continuous flow measurement of whole blood lactate.

Kyrolainen M, Hakanson H, Mattiasson B and Vadgama P. *Biosens Bioelectron* vol. 12, (11) 1073-1081.

Ion exchanger modified PVC membranes selectivity studies and response amplification of oxalate and lactate enzyme electrodes.

Reddy SM and Vadgama PM. *Biosens Bioelectron* vol. 12, (9-10) 1003-1012.

The effect of lipid bilayer manipulation on the response of the glucose oxidase liposome electrode.

Taylor MA, Jones MN, Vadgama PM and Higson SPJ. *Biosens Bioelectron* vol. 12, (6) 467-477.

1996

Flow and microflow - Applications in biomedical sensing devices.

Rigby GP, Pearson JE, Ahmed S, Kane JW, Treloar PH and Vadgama P. *Iee Colloquium (Digest)* (176).

Diffusion restricting outer membranes for greatly extended linearity measurements with glucose oxidase enzyme electrodes.

Maines A, Ashworth D and Vadgama P. *Anal Chim Acta* vol. 333, (3) 223-231.

Materials biocompatibility.

Rigby G and Vadgama P. *Anal Commun* vol. 33, (11) H19-H21.

Stabilized needle electrode system for in vivo glucose monitoring based on open flow microperfusion.

Rigby GP, Crump PW and Vadgama P. *Analyst* vol. 121, (6) 871-875.

Poly(vinyl chloride), polysulfone and sulfonated polyether-ether sulfone composite membranes for glucose and hydrogen peroxide perm-selectivity in amperometric biosensors.

Benmakroha Y, Christie I, Desai M and Vadgama P. *Analyst* vol. 121, (4) 521-526.

Use of direct and indirect methods in diaphragm cell method for estimation of liquid diffusivities of biosolutes.

Turhan M and Vadgama P. *Biotechnol Lett* vol. 18, (3) 287-292.

Direct non-enzymic amperometric glucose sensor based on a novel glucose selective membrane.

Benmakroha Y, Christie I and Vadgama P. *Anal Commun* vol. 33, (1) 23-25.

Use of surfactant-modified cellulose acetate for a high-linearity and pH-resistant glucose electrode.

Maines A, Cambiaso A, Delfino L, Verreschi G, Christie I and Vadgama P. *Anal Commun* vol. 33, (1) 27-30.

Enzyme electrodes for food analysis.

Maines A, Ashworth D and Vadgama P. *Food Technol Biotech* vol. 34, (1) 31-42.

1995

ESTIMATION OF LIQUID DIFFUSIVITIES OF BIOSOLUTES BY USING DIAPHRAGM CELL METHOD WITH DEFINED PORE CHARACTERISTICS.

TURHAN M, DESAI MA, VADGAMA P and MUTLU M. *Biotechnol Tech* vol. 9, (6) 413-416.

Open flow microperfusion: approach to in vivo glucose monitoring.

Rigby GP, Crump P and Vadgama P. *Med Biol Eng Comput* vol. 33, (2) 231-234.

MEDIATED AMPEROMETRIC DETECTION OF GLUCOSE-6-PHOSPHATE-DEHYDROGENASE AT A POLY(VINYL CHLORIDE) COVERED ELECTRODE USING 1,4-BENZOQUINONE AND DIAPHORASE.

TRELOAR PH, CHRISTIE IM, KANE JW, CRUMP P, NKOHWO AT and VADGAMA PM. *Electroanal* vol. 7, (3) 216-220.

DIAMOND-LIKE CARBON-COATED FILMS FOR ENZYME ELECTRODES - CHARACTERIZATION OF BIOCOMPATIBILITY AND SUBSTRATE DIFFUSION LIMITING PROPERTIES.

HIGSON SPJ and VADGAMA PM. *Anal Chim Acta* vol. 300, (1-3) 77-83.

DIAMOND-LIKE CARBON-FILMS FOR ENZYME ELECTRODES - CHARACTERIZATION OF NOVEL OVERLYING PERMSELECTIVE BARRIERS.

HIGSON SPJ and VADGAMA PM. *Anal Chim Acta* vol. 300, (1-3) 85-90.

The modification of enzyme electrode properties with non-conducting electropolymerised films.

Eddy S, Warriner K, Christie I, Ashworth D, Purkiss C and Vadgama P. *Biosensors and Bioelectronics* vol. 10, (9-10) 831-839.

Engineering the right membranes for electrodes at the biological interface; solvent cast and electropolymerised.

Treloar PH, Christie IM and Vadgama PM. *Biosensors and Bioelectronics* vol. 10, (1-2) 195-201.

Microdialysis and Open Microflow?related Systems: for Tissue Access and Glucose Monitoring by Enzyme Electrode.

RIGBY G, DESAI M and VADGAMA P. *Pharmacy and Pharmacology Communications* vol. 1, (12) 585-588.

Bio/haemocompatibility: implications and outcomes for sensors?.

Kyrolainen M, Rigsby P, Eddy S and Vadgama P. *Acta Anaesthesiol Scand Suppl* vol. 104, 55-60.

Engineering the right membranes for electrodes at the biological interface; solvent cast and electropolymerised.

Treloar PH, Christie IM and Vadgama PM. *Biosens Bioelectron* vol. 10, (1-2) 195-201.

The characterization of liposomal glucose oxidase electrodes for the measurement of glucose.

Taylor MA, Jones MN, Vadgama PM and Higson SP. *Biosens Bioelectron* vol. 10, (3-4) 251-260.

1994

Biosensors: a viable monitoring technology?.

Higson SP and Vadgama PM. *Med Biol Eng Comput* vol. 32, (6) 601-609.

ELECTROCHEMICAL IMMUNOASSAY - SIMPLE KINETIC DETECTION OF ALKALINE-PHOSPHATASE ENZYME LABELS IN LIMITED AND EXCESS REAGENT SYSTEMS.

TRELOAR PH, NKOHWO AT, KANE JW, BARBER D and VADGAMA PM. *Electroanal* vol. 6, (7) 561-566.

Selective membranes for the construction and optimization of an amperometric oxalate enzyme electrode.

Reddy SM, Higson SP, Christie IM and Vadgama PM. *Analyst* vol. 119, (5) 949-952.

A STUDY OF ELECTRICAL DOUBLE-LAYER EFFECTS IN THE PRETREATMENT OF 2-ELECTRODE CELLS FOR ENZYME ELECTRODES.

HIGSON SPJ and VADGAMA P. *Electroanal* vol. 6, (5-6) 431-436.

CHRONOCOULOMETRIC INTERROGATIONS OF OXIDASE-BASED ENZYME ELECTRODES FOR ENHANCED SELECTIVITY.

HIGSON SPJ, VADGAMA PM and WARD JP. *Electroanal* vol. 6, (2) 83-88.

1993

An in vitro study of enhanced H⁺ diffusion by urease action on urea. Implications for Helicobacter pylori-associated peptic ulceration.

Desai MA and Vadgama PM. *Scand J Gastroenterol* vol. 28, (10) 915-919.

AMPEROMETRIC ENZYME ELECTRODE BIOFOULING AND PASSIVATION IN BLOOD - CHARACTERIZATION OF WORKING ELECTRODE POLARIZATION AND INNER MEMBRANE EFFECTS.

HIGSON SPJ, DESAI MA, GHOSH S, CHRISTIE I and VADGAMA P. *J Chem Soc Faraday T* vol. 89, (15) 2847-2851.

Biosensors in clinical biochemistry.

Vadgama P. *Ann Clin Biochem* vol. 30 (Pt 4), 337-340.

GLUCOSE-OXIDASE ENZYME ELECTRODE - RELATION BETWEEN INNER MEMBRANE-PERMEABILITY AND SUBSTRATE RESPONSE.

HIGSON SPJ, DESAI M, KOOCHAKI Z and VADGAMA PM. *Anal Chim Acta* vol. 276, (2) 335-340.

POTENTIAL POLYMERIC MEMBRANES FOR ENZYME ELECTRODES.

PISKIN E, MUTLU S, SERBETCI AI, MUTLU M and VADGAMA PM. *Abstr Pap Am Chem S* vol. 205, 39-IEC.

MODIFICATION OF ELECTRODE SURFACES WITH OXIDIZED PHENOLS TO CONFER SELECTIVITY TO AMPEROMETRIC BIOSENSORS FOR GLUCOSE DETERMINATION.

CHRISTIE IM, VADGAMA P and LLOYD S. *Anal Chim Acta* vol. 274, (2) 191-199.

THE DIFFUSION LIMITED OXIDASE-BASED GLUCOSE ENZYME ELECTRODE - RELATION BETWEEN COVERING MEMBRANE-PERMEABILITY AND SUBSTRATE RESPONSE.

KOOCHAKI Z, HIGSON SPJ, MUTLU M and VADGAMA PM. *J Membrane Sci* vol. 76, (2-3) 261-268.

DIRECT ELECTROCHEMICAL DETERMINATION OF PARACETAMOL IN PLASMA.

CHRISTIE I, LEEDS S, BAKER M, KEEDY F and VADGAMA P. *Anal Chim Acta* vol. 272, (1) 145-150.

DIAMOND-LIKE CARBON COATED MICROPOROUS POLYCARBONATE AS A COMPOSITE BARRIER FOR A GLUCOSE ENZYME ELECTRODE.

HIGSON SPJ and VADGAMA PM. *Anal Chim Acta* vol. 271, (1) 125-133.

Internal membranes and laminates for adaptation of amperometric enzyme electrodes to direct biofluid analysis.

Desai MA, Ghosh S, Crump PW, Benmakroha Y and Vadgama PM. *Scand J Clin Lab Invest Suppl* vol. 214, 53-60.

Enhanced H⁺ diffusion by NH₄⁺/HCO₃⁻: implications for Helicobacter-pylori-associated peptic ulceration.

Desai MA and Vadgama PM. *Digestion* vol. 54, (1) 32-39.

FOCUS 92 ASSOCIATION-OF-CLINICAL-BIOCHEMISTS NATIONAL MEETING - JUNE 8-12, 1992, BLACKPOOL, UK.

VADGAMA P. *Analyst* vol. 118, (1) N2-N3.

1992

PLASTICIZED POLY(VINYL CHLORIDE) AS A PERMSELECTIVE BARRIER MEMBRANE FOR HIGH-SELECTIVITY AMPEROMETRIC SENSORS AND BIOSENSORS.

CHRISTIE IM, TRELOAR PH and VADGAMA P. *Anal Chim Acta* vol. 269, (1) 65-73.

BIOSENSORS - RECENT TRENDS - A REVIEW.

VADGAMA P and CRUMP PW. *Analyst* vol. 117, (11) 1657-1670.

Opportunities for the cellular approach in biomedical engineering.

Vadgama P. *Med Biol Eng Comput* vol. 30, (4) CE2-CE7.

THE MATHEMATICAL-MODELING OF IONIC-DIFFUSION THROUGH STAGNANT LAYERS - A MODIFICATION OF THE MORF AND SIMON EQUATION.

LUCAS S, DESAI M and VADGAMA P. *Electroanal* vol. 4, (7) 673-681.

Bicarbonate and other buffer systems can enhance the rate of H⁺ diffusion through mucus in vitro.

Desai MA and Vadgama PM. *Biochim Biophys Acta* vol. 1116, (1) 43-49.

DESIGNING BIOSENSORS.

VADGAMA P. *Chem Brit* vol. 28, (3) 249-252.

SIMPLIFIED MEASUREMENT OF SERUM ALKALINE-PHOSPHATASE UTILIZING ELECTROCHEMICAL DETECTION OF 4-AMINOPHENOL.

CHRISTIE IM, TRELOAR PH, KOOCHAKI ZB, VADGAMA PM and SMITH GN. *Anal Chim Acta* vol. 257, (1) 21-28.

A study of macromolecular diffusion through native porcine mucus.

Desai MA, Mutlu M and Vadgama P. *Experientia* vol. 48, (1) 22-26.

Biosensors: Recent trends a review.

Vadgama P and Crump PW. *The Analyst* vol. 117, (11) 1657-1670.

1991

A liposomal enzyme electrode for measuring glucose.

Rosenberg MF, Jones MN and Vadgama PM. *Biochim Biophys Acta* vol. 1115, (2) 157-165.

Estimation of effective diffusion coefficients of model solutes through gastric mucus: assessment of a diffusion chamber technique based on spectrophotometric analysis.

Desai MA and Vadgama P. *Analyst* vol. 116, (11) 1113-1116.

IMMOBILIZATION OF PROTEINS, COFACTORS, MEDIATORS, TISSUES, CELLS IN THE CONTEXT OF BIOSENSORS FOR USE INVITRO AND INVIVO.

VADGAMA P, CRUMP P and HIGSON S. *Abstr Pap Am Chem S* vol. 202, 39-BIOT.

ELECTROCHEMICAL TRANSDUCERS FOR INVIVO MONITORING.

VADGAMA P, DESAI M and CRUMP P. *Electroanal* vol. 3, (7) 597-606.

CHEMICAL SENSORS AND BIOSENSORS - NEARER THE PATIENT.

VADGAMA P, DESAI MA, CHRISTIE I and KOOCHAKI Z. *Pure Appl Chem* vol. 63, (8) 1147-1152.

pH dependence of hydrochloric acid diffusion through gastric mucus: correlation with diffusion through a water layer using a membrane-mounted glass pH electrode.

Nicholas CV, Desai M, Vadgama P, McDonnell MB and Lucas S. *Analyst* vol. 116, (5) 463-467.

MATRIX SURFACE MODIFICATION BY PLASMA POLYMERIZATION FOR ENZYME IMMOBILIZATION.

MUTLU M, MUTLU S, ROSENBERG MF, KANE J, JONES MN and VADGAMA P. *J Mater Chem* vol. 1, (3) 447-450.

ELECTRODE RESPONSES TO PHENOLIC SPECIES THROUGH CELLULOSIC MEMBRANES.

KOOCHAKI Z, CHRISTIE I and VADGAMA P. *J Membrane Sci* vol. 57, (1) 83-94.

Electrochemical determination of the permeability of porcine mucus to model solute compounds.

Desai MA, Nicholas CV and Vadgama P. *J Pharm Pharmacol* vol. 43, (2) 124-127.

Problems of clinical data interpretation.

Vadgama P, Desai M, Koochaki Z and Treloar P. *Biochem Soc Trans* vol. 19, (1) 11-15.

MEASUREMENT OF EFFECTIVE HCl DIFFUSION-COEFFICIENTS THROUGH AQUEOUS AND GEL FILMS BY A PH JUMP TECHNIQUE.

NICHOLAS CV, DESAI MA, VADGAMA PM, LUCAS S and MCDONNELL MB. *J Chem Soc Faraday T* vol. 87, (2) 293-296.

Determination of urate in undiluted whole blood by enzyme electrode.

Keedy FH and Vadgama P. *Biosensors and Bioelectronics* vol. 6, (6) 491-499.

Estimation of effective diffusion coefficients of model solutes through gastric mucus: Assessment of a diffusion chamber technique based on spectrophotometric analysis.

Desai MA and Vadgama P. *Analyst* vol. 116, (11) 1113-1116.

In vivo biosensors.

Vadgama P and Desai MA. *Bioprocess Technol* vol. 15, 303-338.

1990

MEMBRANE BASED SENSORS - A REVIEW.

VADGAMA P. *J Membrane Sci* vol. 50, (2) 141-152.

COMPOSITE LIQUID MEMBRANE FOR ENZYME ELECTRODE CONSTRUCTION.

TANG LX, KOOCHAKI ZB and VADGAMA P. *Anal Chim Acta* vol. 232, (2) 357-365.

Optimisation of enzyme electrodes.

Tang LX and Vadgama P. *Medical & Biological Engineering & Computing* vol. 28, (3).

Optimisation of enzyme electrodes.

Tang LX and Vadgama P. *Med Biol Eng Comput* vol. 28, (3) B18-B24.

DIFFUSION-COEFFICIENTS FOR HCL UNDER CONDITIONS APPROACHING NEUTRALITY.

NICHOLAS CV, MCDONNELL MB and VADGAMA P. *J Chem Soc Chem Comm* (4) 320-321.

1989

MEMBRANES - SEPARATION PRINCIPLES AND SENSING.

MCDONNELL MB and VADGAMA PM. *Select Electr Rev* vol. 11, (1) 17-67.