

Curriculum vitae

PERSONAL INFORMATION

Family name, First name: **Kant, Krishna**

Date of birth: 01.07.1983

ORCID: orcid.org/0000-0003-2948-9471

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EDUCATION

- 2014 PhD: Bio-molecular impedance biosensing in Nanofluidic device.
School of Chemical and Physical Sciences, Flinders University, Adelaide, Australia
- 2008 Master of Technology (M.Tech. Nano-biotechnology)
Amity institute of Nanotechnology, Amity University, Noida, U.P., India
- 2005 Masters of Sciences (M.Sc. Biotechnology)
Department of Life Science/Biotechnology, Chhatrapati Shahu Ji Maharaj, University
Kanpur, India
- 2003 Bachelor of Science (Zoology & Chemistry) Chhatrapati Shahu Ji Maharaj, University
Kanpur, India

CURRENT AND PREVIOUS POSITIONS

- April 2016 –
Dec 2017* Postdoctoral Research Fellow
Department of Nanotechnology, Denmark technical University, Denmark.
*Involved in, HORIZON 2020 project for development of SNARTDIAGNOSTIC chip for
Sepsis disease. Designing of the chip and assay development.*
- Nov.2014 –
March 2016* Postdoctoral Research Fellow
Department of Biochemistry, The Hebrew University, Rehovot, Israel.
Involved in, EU project for cryo-preservation of the human organs on microfluidic chip.
- April-July
2014* Research Associate
School of Civil, Environmental and Mining Engineering, The University of Adelaide,
Australia.
Involved in, project for synthesis and isolation of iron nanowires from iron bacteria biofilm.
- 2008 - 2009* Research Assistant
Ian Wark Research Institute, University of South Australia, Australia
Involved in, fabrication of nanoporous alumina membranes for biosensing applications.

FELLOWSHIPS AND AWARDS

- 2015 The lady Davis Trust Fellowship for Postdoctoral research, The Hebrew University
Jerusalem.
- 2014 Short term research grant (AUD 25K) on ‘Characterization of Bacterial Iron Nanowire from
Biofilm’ Adelaide University, South Australia and SA Water, Australia.
- 2013 Flinders university research student travel grants (AUD 1.1K).
- 2011 Australian National Fabrication Facility, South Australian Node (ANFF-SA) Start up Award
(AUD 5K) for fabrication of Micro/Nanofluidic devices.
- 2010-2014 Australian Research Council linkage project scholarship for PhD, Flinders University,
Adelaide, Australia

MOBILITY (*research stays abroad lasting more than three months*)

2008 Geological Nuclear Sciences Centre (GNS) Lower Hutt, Wellington, New Zealand
7 months (March 2008 – Oct 2008) for master's thesis.

SUPERVISION OF GRADUATE STUDENTS AND RESEARCH FELLOWS

2014 Master Students (Iron nanowire extraction from bacterial cells)
School of Civil, Environmental and Mining Engineering, The University of Adelaide,
Australia.

TEACHING ACTIVITIES

2014 Laboratory demonstrator – General Chemistry, Flinders University, Australia.

2014 Completed academic internship program for doctoral students for development of teaching skills.

INSTITUTIONAL RESPONSIBILITIES

2013 Nanotechnology Ambassador at Flinders University Science Alive, Flinders University,
Australia

COMMISSIONS OF TRUST

Since 2015 Lead guest editor of Special Issues in Journal of Nanomaterials, Hindawi publications.

Since 2012 Member of Australian Nanotechnology Network, Australia.

Since 2013 Research consultant for nanomaterial synthesis at *AVANSA Technology & Services. India*

List of Publications:

PUBLISHED BOOK CHAPTERS AND REVIEW PAPERS:

1. **K. Kant, D. Losic**, Focused Ion Beam (FIB) technology for micro and nanoscale fabrications, "Lecture notes in Nanoscale Science and Technology, Vol 20, Eds. Z.M. Wang, A. Wang, G. Salamo, N. Kishimoto, S. Belluci, **Y.I. Park, Springer**, 2013, 1-22, DOI 10.1007/978-3-319-02874-3_1
2. Jon Ashley, Mohammad-Ali Shahbazi, **Krishna Kant**, Vinayaka Aaydha Chidambara, Anders Wolff, Dang Duong Bang, Yi Sun: Molecularly Imprinted Polymers for Sample Preparation and Biosensing in Food analysis: Progress and Perspectives. **Biosensors & Bioelectronics** 01/2017; 91., DOI:10.1016/j.bios.2017.01.018
3. **Krishna Kant**, Mohammad-Ali Shahbazi, Vivek Priy Dave, Tien Anh Ngo, Vinayaka Aaydha Chidambara, Quyen Than Linha, Dang Duong Bang and Anders Wolff : Microfluidic devices for sample preparation and rapid detection of foodborne pathogens. **Biotechnology Advances** (Under review) 2017

LIST OF PEER REVIEWED PUBLICATIONS

4. **Krishna Kant**, Tien Anh Ngo, Marco Matteucci, Ozsefil Cem Ibrahim and Anders Wolff, A novel free angle lithography for Fabrication of 3D microstructure array on chip and their integration with Solid phase PCR, **Lab On Chip**, 2017 (Under review).

5. Mohammed Alsawat, **Krishna Kant**, Tariq Altalhi, Abel Santos, Dusan Losic: Influence of Surface Chemistry on the Ionic Conductivity of Vertically Aligned Carbon Nanotube Composite Membranes. **RSC Advances** 04/2016; 6(50)., DOI:10.1039/C6RA06701H
6. **Krishna Kant**, Gurvinder Singh, Mahaveer Kurkuri: Advances in Nanoporous Materials. *Journal of Nanomaterials* 01/2016; 2016., DOI:10.1155/2016/4350952
7. **Krishna Kant**, Jeongha Yoo, Steven Amos, Mason Erkelens, Craig Priest, Joe G. Shapter, Dusan Losic: Microbial cell lysis and nucleic acid extraction via nanofluidic channel. **RSC Advances** 03/2015; 5(30), DOI:10.1039/C5RA01336D
8. Karan Gulati, **Krishna Kant**, David Findlay, Dusan Losic: Periodically tailored titania nanotubes for enhanced drug loading and releasing performances. **Journal of Materials Chemistry B**, 02/2015; 3(12)., DOI: 10.1039/C4TB01882F
9. **Krishna Kant**, Craig Priest, Joe G. Shapter, Dusan Losic, 'Influence of nanopore dimensions on electrochemical properties of nanopore arrays studied by impedance spectroscopy' **Sensors**, **2014**, 14(11), 21316-21328. (Doi:10.3390/s141121316)
10. S. Chandrasekaran, M. J. Sweetman, **K. Kant**, W. Skinner, D. Losic, T. Nann and N. H. Voelcker, "Silicon diatom frustules as nanostructured photoelectrodes", **Chemical Communications**, (2014) 50, 10441-10444 (DOI: 10.1039/C4CC04470C).
11. **Krishna Kant**, Craig Priest, Joe G. Shapter, Dusan Losic, 'Characterization of impedance biosensing performance of single and nanopore arrays of anodic porous alumina fabricated by focused ion beam (FIB) milling' **Electrochimica Acta** **139** (2014) 225–231 dx.doi.org/10.1016/j.electacta.2014.07.023
12. S. Simovic, K. R. Diener, A. Bachhuka, **K. Kant**, D. Losic, J. D. Hayball, M.P. Brown, and K. Vasilev, "Controlled release and bioactivity of the monoclonal antibody rituximab from a porous matrix: a potential in situ therapeutic device" **Materials Letters**, **130**(2014)210–214 (dx.doi.org/10.1016/j.matlet.2014.05.110)
13. **K. Kant**, J. Yu, C. Priest, J. G. Shapter, D. Losic "Impedance nanopore biosensor: influence of pore dimensions on biosensing performance" **Analyst** **2014**, 139, (5), 1134-1140 Doi: 10.1039/c3an01933k
14. **K. Kant**, M. Kurkuri, J. Yu, J. G. Shapter, C. Priest, D. Losic, 'Impedance spectroscopy study of nanopore arrays for biosensing applications'. **Sci. Adv. Mater.** 6, 1375-1381 (2014) dx.doi.org/10.1166/sam.2014.1807
15. Y. Yu, **K. Kant**, J. G. Shapter, J. Addai-Mensah, D. Losic, Characterisation of catalytic properties of gold nanotube membranes, **Microporous and Mesoporous Materials**, **2012**, 153, 131-136. Doi.org/10.1016/j.micromeso.2011.12.011
16. **K. Kant**, D. Losic, Self-ordering electrochemical synthesis of TiO₂ nanotube arrays: controlling the nanotube geometry and the growth rate, **International Journal of Nanoscience**, **2011**, 10 (1-2) 1-6 (invited) DOI: 10.1142/S0219581X11007454
17. **K. Kant**, R. E. Sabzi, D. Losic, Template synthesis of nickel, cobalt and nickel hexacyanoferrate nanodot, nanorod and nanotube arrays, **International Journal of Nanoscience**, **2011**, 10 (1-2) 55-58 (invited) (DOI:10.1142/S0219581X11007466)
18. D. Losic, L. Velleman, **K. Kant**, T. Kumeria, K. Gulati, J.G. Shapter, D. A. Beattie, S. Simovic, Self-ordering electrochemistry: a simple approach for engineering nanopore and nanotube arrays for emerging applications, **Australian Journal of Chemistry** **2011**, 64, 294-301, Research front paper, (invited) (Doi.org/10.1071/CH10398)

19. K. Vasilev, Z. Poh, **K. Kant**, J. Chan, A. Michelmore, D. Losic, Tailoring the surface functionalities of titania nanotube arrays, **Biomaterials** **2010**, 31,532-540. (Doi: 10.1016/j.biomaterials.2009.09.074.)
20. **K. Kant**, S. P. Low, A. Marshal, J. G. Shapter, D. Losic, Nanopore gradients on porous aluminium oxide generated by nonuniform anodization of aluminium, **ACS Applied Materials and Interfaces**, **2010**, 2, 3447-3454. (Doi: 10.1021/am100502u)
21. Reza Emamali Sabzi, **Krishna Kant**, Dusan Losic "Electrochemical synthesis of nickel hexacyanoferrate nanoarrays with dots, rods and nanotubes morphology using a porous Alumina template" **Electrochimica Acta** volume 55, Issue 5, 1 February **2010**, 1829-1835. (Doi.org/10.1016/j.electacta.2009.10.075)
22. **K. Krishna**, D. Losic, A simple approach for synthesis of TiO₂ nanotubes with through-hole morphology, **Physica Status Solidi RRL**, **2009**, 3, No. 5, 139-141. (DOI: 10.1002/pssr.200903087)

2. PAPERS PUBLISHED IN CONFERENCE PROCEEDINGS:

1. Shahbazi, M. A., **Kant, K.**, Kaplinsky, J. J., Chidambara, V. A., Bang, D. D., & Wolff, A. (2017, January). From 2D fluidic array screening to 3D bacterial capturing structures in a point of care system for sepsis diagnosis. **In Micro Electro Mechanical Systems (MEMS)**, 2017 IEEE 30th International Conference on (pp. 440-443). IEEE. 10.1109/MEMSYS.2017.7863437
2. Anders Wolff, Vinayaka Aaydha Chidambara, Mohammad-Ali Shahbazi, **Krishna Kant**, Tien Ngo Anh, Dang Duong Bang, SMARTDIAGNOS-Next generation technology for detection of the pathogens causing sepsis-an EU Horizon 2020 innovation project, **Infection and Immunity**, **2017**, Vol 45, Issue Suppl 1. (DOI 10.1007/s15010-017-1046-8)
3. Andreas Markwitz, **Krishna Kant**, Damian Carder and Peter B. Johnson "Low-energy Fe⁺ ion implantation into silicon nanostructures " **American Institute of Physics (AIP) proceedings**, **2009** - Volume 1151 , pp. 149-152. (DOI: 10.1063/1.3203224)
4. M. Naushad Ali, **K. Kant**, M. Kaur, Meetu Bharti "Growth and characterization of ZnO Nanotetrapod for the Biosensor Application"**Journal of Natural and Engineering Sciences** ISSN 1307-1149, Vol (3), **2009**.
5. Kaur Manmeet, **Krishna Kant**, "Growth and characterization of ZnO Nanotetrapod" DAE (Department of atomic energy) Solid State Physics Symposium (**2007**).

3. CONFERENCES PRESENTATION (ORAL/POSTER)

1. **Krishna Kant**, Growth of Ice crystal under microfluidic environment, NanoIsrael 2016, Tel Aviv on 22-23 February, **2016**.
2. **Krishna Kant**, Characterization of Ice crystal with antifreezing protein, Israeli Biophysical Society Annual Meeting **2015** Faculty of Biotechnology & Food Engineering, The Technion.
3. **Krishna Kant**, 'Microbial cell lysis and nucleic acid extraction via nanofluidic channel' The Hebrew University Center for Nanoscience and Nanotechnology, Annual Conference March 29-30, **2015** Ashkelon, Israel.

4. M. Erkelens, **K. Kant**, P. Forward, M.F. Lambert, D. Losic, 'Large scale production of iron-oxide magnetic nanowires from bacterial biofilm' RACI National Congress, 7-12 December **2014**, Adelaide, South Australia.
5. **K. Kant**, S. Amos, M. Erkelens, C. Priest, J. G. Shapter, D. Losic, 'Microchip nanofluidic channel for microbial cell lysis and nucleic acids extraction' RACI National Congress, 7-12 December **2014**, Adelaide, South Australia.
6. M. Alsawat, **K. Kant**, T. Altalhi and D. Losic, 'Tuning of electrochemical properties of carbon nanotube membranes by chemical modification' ICONN 2-6 Feb. **2014** Adelaide.
7. M. Erkelens, **K. Kant**, P. Forward, M.F. Lambert, D. Losic, 'Characterization of Bacterial Iron Nanowire from Biofilm: toward large scale production of nanomaterials from the environmental waste' ICONN 2-6 Feb. **2014** Adelaide.
8. **K. Kant**, J. G. Shapter, C. Priest, D. Losic, 'Impedance spectroscopy study on focused ion beam (FIB) milled nanopore arrays of alumina membrane' Nanotoday, 8-12 Dec. **2013** Singapore.
9. **K. Kant**, J. Rochow, C. Priest, J. G. Mitchell, J. G. Shapter, D. Losic, 'Growth of conducting microbial nanowires through nanofluidic membrane' 4th Australia and New Zealand Micro/Nanofluidics Symposium (ANZMNF) 22-23 April **2013** Adelaide, Australia.
10. K. Gulati, **K. Kant**, D. Losic, "Enhanced drug storage and elution characteristics of geometrically tailored Titania nanotubes" Thirteenth International Conference on Science and Application of Nanotubes (NT12), 24–29 June **2012** Brisbane, Australia.
11. **K. Kant**, M. Kurkuri, J. Yu, J. G. Shapter, C. Priest, D. Losic, 'Impedance spectroscopy study of nanopore arrays for biosensing applications' **1st International Conference on Emerging Advanced Nanomaterials (ICEAN), 22-25 October 2012 Brisbane, Australia.**
12. Y. Yu, **K. Kant**, J. G. Shapter, J. Addai-Mensah, D. Losic, Study of catalytic properties of gold nanotube membranes, Chemeca 2011 proceeding , Sydney 18-21 Sept. **2011**.
13. **K. Kant**, D. Losic, Self-ordering electrochemical synthesis of TiO₂ nanotube arrays: controlling the nanotube geometry and the growth rate, International Conference on Advance Nanomaterials and Nanotechnology (ICANN 2009) 9-11 December **2009** Guwahati, India.
14. **K. Kant**, R. E. Sabzi, D. Losic, Template synthesis of nickel, cobalt and nickel hexacyanoferrate nanodot, nanorod and nanotube arrays, International Conference on Advance Nanomaterials and Nanotechnology (ICANN) 9-11 December **2009**, Guwahati, India.
15. Z. Poh, K.Vasilev, **K.Kant**, R.E. Sabzi, D. Losic, Synthesis, Nanostructure and Crystallization of Titania Nanotube Arrays Fabricated by Electrochemical Anodization 16th AINSE Conference on Nuclear and Complementary Techniques of Analysis, 25-27 Nov **2009** Sydney, Australia. RMID 0020138947.