

## PERSONAL INFORMATION

Name: **Arathyram Ramachandra Kurup Sasikala, PhD**

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## PROFESSIONAL EXPERIENCE

**Current Position:** **Marie Curie Fellow**, Nanomedicine, Drug Delivery & Nanotoxicology (NDDN- Ali-Boucetta) Lab, College of Medical & Dental Sciences, University of Birmingham, UK (21/09/20- 20/09/22).

**Previous Position:** **Visiting Fellow**, Nanomedicine, Drug Delivery & Nanotoxicology (NDDN- Ali-Boucetta) Lab, College of Medical & Dental Sciences, University of Birmingham, UK (15/06/19- 31/07/20).

**Previous Position:** **Assistant Research Professor**, Bionanosystem Engineering Department, Chonbuk National University, South Korea, (01/12/16- 17/12/19).

**Previous Position:** **Junior research fellow (JRF)** in National Remote Sensing Centre, Indian Space Research Organization (ISRO), India, Project Name: National Action Plan on Climate Change (NAPCC), Urban Landscape Modeling: Energy conservation project, (14/07/2011– 31/05/2013)

## RESEARCH FUNDING

- **Marie Curie Fellow** on the project entitled as ‘**Noninvasive Modulation of the Blood Brain Barrier using PiezoMagnetic Carbon Nanoneedles: PiezoMagBBB**’
- **Principal Investigator (PI)** in a three year funded project entitled “**Development of Blood Flow Driven Piezoelectric Nanogenerator for in vivo Powered Smart Stent**” worth **50,000US\$/year** from the Basic Science Research Program through the **National Research Foundation of Korea (NRF)** funded by the Ministry of education, Science and Technology (**Project number: NRF 2016R1D1A1B03934124**).

## EDUCATIONAL QUALIFICATIONS

01/09/2013 – 22/08/2016 PhD, Chonbuk National University, South Korea

01/12/2009 – 14/12/2010 MPhil, Cochin University of Science and Technology (CUSAT), India

03/11/2008 – 27/11/2009 Bachelor of Education in Physical Science, Kerala University, India

01/06/2006 – 29/05/2008 Master Degree in Physics, Kerala University, India

04/06/2003 – 30/03/2006 Bachelor Degree in Physics, Kerala University, India

## PHD THESIS

*Controlled Synthesis and Surface Tailoring of Iron Oxide Nanoparticle Based Nanocomposites for Cancer Theranostics (22/08/2016)*

## FELLOWSHIPS AND AWARD

Sep 2013 – Aug 2016 **BK21 PLUS** (Brain Korea 21 Program for Leading Universities & Students) Scholarship from Korean Government for PhD

Jun 2014 **Travel grant** for the best abstract in 10<sup>th</sup> International Conference on the Scientific and Clinical Applications of Magnetic Carriers 2014, Technical University Dresden, Germany

Sep 2010 – Feb 2011 **DAAD Fellowship**, A New Passage to India, WISE- Working Internships in Science and Engineering Programme (For doing internship in University of Applied Sciences, Stuttgart, Germany)

Nov 2009 – Aug 2010

**SPEED-IT Scholarship** from Department of Information Technology, Govt. of Kerala, India- MPhil programme

### **SUPERVISION OF STUDENTS: Primary Supervisor for two master theses**

### **TEACHING EXPERIENCE**

Delivered 14 lecture course (3hr each) on Advanced Biophysics for Postgraduate & PhD students (2018 Fall Semester) at Bionanosystem Engineering Department, Chonbuk National University, South Korea

### **MEMBERSHIPS**

2016- Date European Magnetic Association (EMA)  
2018- Date American Association of Cancer Research (AACR)  
2019 -Date British Society for Nanomedicine (BSNM)

### **INTERNATIONAL CONFERENCES**

1. First Virtual British Society for Nanomedicine Early Career Research Meeting held on 25th & 26th November 2020
2. Fifth International Conference on Electronic Materials and Nanotechnology for Green Environment (ENGE 2018), Jeju, South Korea, 11/11/18 -14/11/ 18
3. The Fourth CRI-CIMT-EATI-AACR International Cancer Immunotherapy Conference: Translating Science into Survival, 2018, New York, USA, 30/09/18 – 03/10/18
4. Fifth Membrane Society of Australia Early Career Researcher Membrane Symposium Macquarie University, Sydney,05/02/19 - 06/02/19
5. Twenty-Sixth International Conference on "Processing and Fabrication of Advanced Materials (PFAM-XXVI), Chonbuk National University, South Korea, 16/10/17-21/10/17
6. Extracellular Vesicles, Magdalene College, Cambridge, UK. 26/09/17-28/09/17
7. Second IBN International Symposium (IBN-is) on Nanomedicine and Nanoassays 2014, Biopolis, Singapore, 08/12/14-09/12/14
8. The 2014 Asian Conference on Nanoscience and Nanotechnology (AsiaNANO 2014), Jeju, Korea, 26/10/14- 29/10/14
9. The twelfth International Conference on Nano Science and Nanotechnology (ICNST 2014), Mokpo National University, South Korea,06/11/2014-07/11/14
10. Tenth International Conference on the Scientific and Clinical Applications of Magnetic Carriers 2014, Technical University Dresden, Germany, 10/06/14-14/06/14
11. International Bioprinting Congress, Biopolis, Singapore, 24/07/14 – 25/07/14
12. International Symposium on “Smart Biomaterials” (Second Hoffman Family Symposium), National Institute for Materials Science (NIMS), JAPAN,24/03/14-25/03/14
13. ICNST 2014, Chosun University, South Korea,07/11/13-08/11/13
14. International Conference on Nanotechnology Dubai 2013, Dubai - United Arab Emirates, 28/10/13 - 30 /10/13
15. Fourth International Conference on Biobased Polymers (ICBP2013), Hanyang University, South Korea, 25/09/13-28/09/13
16. Applied Geoinformatics for Society and Environment (AGSE 2012), Universiti Teknologi Malaysia, Johor Bahru, Malaysia, 16/07/12 – 20/07/12
17. Applied Geoinformatics for Society and Environment (AGSE 2010), Univesidad Catolica de Santa Maria, Arequipa, Peru, 03/08/10-06/08/10

### **PUBLICATIONS**

1. Ghizlane Choukrani, Bikendra Maharjan, Chan Hee Park, Cheol Sang Kim, **Arathyram Ramachandra Kurup Sasikala**, Biocompatible superparamagnetic sub-micron vaterite particles for thermo-chemotherapy: From controlled design to in vitro anticancer synergism, *Materials Science and Engineering: C*,106, 110226, 2020, ***I.F- 5.88*** (**Senior Corresponding Author**)
2. Minjung Kim, Vignesh Krishnamoorthi Kaliannagounder, Afeesh Rajan Unnithan, Chan Hee Park, Cheol Sang Kim, **Arathyram Ramachandra Kurup Sasikala**, Development of In-Situ Poled Nanofiber Based Flexible Piezoelectric Nanogenerators for Self-Powered Motion Monitoring, *Applied Sciences*, 10, 3493, 2020. ***I.F- 1.85***, (**Senior Corresponding Author**)
3. Abdelrahman I Rezk, **Arathyram Ramachandra Kurup Sasikala**, Amin Ghavami Nejad, Hamouda M Mousa, Young Min Oh, Chan Hee Park, Cheol Sang Kim, Strategic design of a Mussel-inspired in situ reduced Ag/Au-Nanoparticle Coated Magnesium Alloy for enhanced viability, antibacterial property and decelerated corrosion rates for degradable

- implant Applications, *Scientific reports*, 9, 1-12, 2019, **I.F- 4.12**
4. **Arathyram Ramachandra Kurup Sasikala**, Afeesh Rajan Unnithan, Chan Hee Park, Cheol Sang Kim, Multifaceted Implantable Anticancer Device for Potential Postsurgical Breast Cancer Treatment: A Single Platform for Synergistic Inhibition of Local Regional Breast Cancer Recurrence, Surveillance and Healthy Breast Reconstruction, *Advanced Functional Materials*, 28, 1704793, 2018, **I.F- 16.836**
  5. **Arathyram Ramachandra Kurup Sasikala**, Afeesh Rajan Unnithan, Reju George Thomas, Tumurbaatar Batgerel, Yong Yeon Jeong, Chan Hee Park and Cheol Sang Kim, Hexa-functional tumour-seeking nano voyagers and annihilators for synergistic cancer theranostic applications, *Nanoscale*, 10, 19568-19578, 2018. **I.F- 6.89**
  6. Afeesh Rajan Unnithan, **Arathyram Ramachandra Kurup Sasikala**, Shalom Sara Thomas, Amin Ghavami Nejad, Youn Soo Cha, Chan Hee Park, Cheol Sang Kim, Strategic design and fabrication of biomimetic 3D scaffolds: Unique architectures of extracellular matrices for enhanced adipogenesis and soft tissue reconstruction, *Scientific reports*, 8, 1-12, 2018, **I.F- 4.122 (Equal first author contribution)**
  7. Afeesh Rajan Unnithan, **Arathyram Ramachandra Kurup Sasikala**, Chan Hee Park, Cheol Sang Kim, A unique scaffold for bone tissue engineering: An osteogenic combination of graphene oxide–hyaluronic acid–chitosan with simvastatin, *Journal of Industrial and Engineering Chemistry*, 46,182-191, 2017, **I.F- 5.09**
  8. Afeesh Rajan Unnithan, Amin Ghavami Nejad, **Arathyram Ramachandra Kurup Sasikala**, Reju George Thomas, Yong Yeon Jeong, Priya Murugesan, Saeed Nasser, Dongmei Wu, Chan Hee Park, Cheol Sang Kim, Electrospun zwitterionic nanofibers with in situ decelerated epithelialization property for non-adherent and easy removable wound dressing application, *Chemical Engineering Journal*, 287, 640–648, 2016, **I.F- 10.652**
  9. **Arathyram Ramachandra Kurup Sasikala**, Reju George Thomas, Afeesh Rajan Unnithan, Balasubramaniam Saravanakumar, Yong Yeon Jeong, Chan Hee Park, Cheol Sang Kim, Multifunctional Nanocarpets for Cancer Theranostics: Remotely Controlled Graphene Nanoheaters for Thermo-Chemosensitisation and Magnetic Resonance Imaging, *Scientific Reports*, 6, 20543, February 2016, **I.F- 4.122**
  10. **Arathyram Ramachandra Kurup Sasikala**, Afeesh Rajan Unnithan, Yeo-Heung Yun, Chan Hee Park, Cheol Sang Kim, An implantable smart magnetic nanofiber device for endoscopic hyperthermia treatment and tumor-triggered controlled drug release, *Acta Biomaterialia*, 31, 122–133, 2016, **I.F- 6.69**
  11. Amin GhavamiNejad, **Arathyram Ramachandra Kurup Sasikala**, Afeesh Rajan Unnithan, Reju George Thomas, Yong Yeon Jeong, Mohammad Vatankeh-Varnoosfaderani, Florian J. Stadler, Chan Hee Park and Cheol Sang Kim, Mussel-Inspired Electrospun Smart Magnetic Nanofibers for Hyperthermic Chemotherapy, *Advanced Functional Materials*, 25, 2867-2875, 2015, **I.F- 16.836 (Equal first author contribution)**
  12. **Arathyram Ramachandra Kurup Sasikala**, Amin GhavamiNejad, Afeesh Rajan Unnithan, Reju George Thomas, Myeongju Moon, Yong Yeon Jeong, Chan Hee Park, Cheol Sang Kim, A smart magnetic nanoplatform for synergistic anticancer therapy: manoeuvring mussel-inspired functional magnetic nanoparticles for pH responsive anticancer drug delivery and hyperthermia, *Nanoscale*, vol. 7, issue 43, pp 18119-18128, 2015, **I.F- 6.89**
  13. **Arathyram Ramachandra Kurup Sasikala**, Afeesh Rajan Unnithan, Chan Hee Park, Cheol Sang Kim, Design and application of a smart nanodevice by combining cationic drug delivery and hyperthermia for cancer apoptosis, *Journal of Materials Chemistry B*, 4, 785-792, 2015, **I.F- 5.344**
  14. Reju George Thomas, Myeong Ju Moon, Hyegyeeong Lee, **Arathyram Ramachandra Kurup Sasikala**, Cheol Sang Kim, In-Kyu Park, Yong Yeon Jeong, Hyaluronic acid conjugated superparamagnetic iron oxide nanoparticle for cancer diagnosis and hyperthermia therapy, *Carbohydrate polymers*, 131, 439-446, 2015. **I.F- 6.23**
  15. Amin GhavamiNejad, Afeesh Rajan Unnithan, **Arathyram Ramachandra Kurup Sasikala**, Melisa Samarikhalaj, Reju George Thomas, Yong Yeon Jeong, Saeed Nasser, Priya Murugesan, Dongmei Wu, Chan Hee Park, Cheol Sang Kim, Mussel-inspired electrospun nanofibers functionalized with size-controlled silver nanoparticles for wound dressing application, *ACS applied materials & interfaces*, 7, 12176-12183, 2015, **I.F- 8.33**
  16. Afeesh Rajan Unnithan, **Arathyram Ramachandra Kurup Sasikala**, Priya Murugesan, Malarvizhi Gurusamy, Dongmei Wu, Chan Hee Park, Cheol Sang Kim, Electrospun Polyurethane-Dextran Nanofiber Mats loaded with Estradiol for Post-Menopausal Wound Dressing, *International journal of biological macromolecules*, 77, 1-8, 2015, **I.F- 5.162 (Equal first author contribution)**
  17. Afeesh Rajan Unnithan, **Arathyram Ramachandra Kurup Sasikala**, Yesupatham Sathishkumar, Yang Soo Lee, Chan Hee Park, Cheol Sang Kim, Nanoceria doped Electrospun Antibacterial Composite Mats for Potential Biomedical Applications, *Ceramics International*, 40, 12003–12012, September 2014, **I.F- 3.6 (Equal first author contribution)**

#### EDITED BOOK

Afeesh Rajan Unnithan, **Arathyram Ramachandra Kurup Sasikala**, Chan Hee Park, Cheol Sang Kim, **Biomimetic Nanoengineered Materials for Advanced Drug Delivery**, Elsevier, ISBN:978-0-12-814944-7 , 2019

#### BOOK CHAPTERS

1. Afeesh Rajan Unnithan, **Arathyram Ramachandra Kurup Sasikala**, Cheol Sang Kim, **Chapter 3:** Electrospinning of Polymers for Tissue engineering, pp 45-55, In Nanotechnology Applications for Tissue Engineering, Elsevier, Micro and Nanotechnology series, ISBN: 978-0-323-32889-0, **2015**
2. Afeesh Rajan Unnithan, **Arathyram Ramachandra Kurup Sasikala**, Cheol Sang Kim, **Chapter 7:** Scaffolds with Antibacterial Properties, pp 103-123, In Nanotechnology Applications for Tissue Engineering, Elsevier, Micro and Nanotechnology series, ISBN: 978-0-323-32889-0, **2015**
3. Afeesh Rajan Unnithan, **Arathyram Ramachandra Kurup Sasikala**, Chan Hee Park , Cheol Sang Kim, **Chapter 9:** Electrospun Polyurethane Nanofibrous Mats for Wound Dressing Applications, pp 233-246, In Polyurethane Polymers Blends and Interpenetrating Polymer Networks, Elsevier, ISBN: 978-0-12-804039-3, **2017**
4. Afeesh Rajan Unnithan, **Arathyram Ramachandra Kurup Sasikala**, Chan Hee Park, Cheol Sang Kim, **Chapter 2:** Nanofibers Based Anticancer Drug Delivery Platform, Biomimetic Nanoengineered Materials for Advanced Drug Delivery, pp 11-30, Elsevier, ISBN:978-0-12-814944-7, **2019**