

Chul B. Park's 3-Page CV

1. ACADEMIC POSITIONS

- **NSERC Ind. Res. Chair in Multi-Functional Graphene-Based Polymer Nanocomposites and Foams**, Univ. of Toronto 2017.09-present
- **Distinguished Professor of Microcellular Engineered Plastics**, Univ. of Toronto 2015.07-present
- **Professor**, Department of Mechanical & Industrial Engineering, Univ. of Toronto 2000.07-present
- **Tier 1 Canada Research Chair in Microcellular Plastics**, Univ. of Toronto 2009.01-2015.12

2. EDUCATION

- Ph.D. Massachusetts Institute of Technology (MIT), USA 1888.09-1993.02
- M.A.Sc. Korea Adv. Inst. of Sci. and Tech. (KAIST), Korea 1983.03-1985.02
- B.A.Sc. Seoul National University, Korea 1979.03-1983.02

3. MOST SIGNIFICANT RESEARCH CONTRIBUTIONS

- **Cell Nucleation & Expansion Mechanisms:** Prof Park has uncovered the major fundamental mechanisms of cell nucleation and expansion in plastic foaming that have eluded researchers for years. Numerous companies are using this information in their manufacture of foam-grade resins or high-value foam products.
- **Thermo-Physical Properties of Polymer/Gas Mixtures:** Prof Park has identified the critical thermo-physical properties of polymer/gas mixtures that affect plastic foaming significantly. Over 100 foam companies thus far have put this data to effective use.
- **Bead Foaming Technology:** Prof Park identified the fundamental mechanisms of the bead foaming technology. For example, biodegradable polylactide (PLA) bead foams with double melting peaks have been successfully made. This patented technology was exclusively licensed by Synbra, The Netherlands.
- **Conductive Polymer Composites and Foams:** Prof Park has developed a technology to reduce the expensive conductive filler content significantly to achieve the required percolation of the fillers with the foaming technology.
- **Nanofibril Technology:** Prof Park has developed a nanofibril technology to enhance the foaming ability and the mechanical properties of plastic resins. This technology is exclusively licensed to Createx Technology/NFT with \$4M research funding to UofT for further development. This technology is being commercialized with \$26M investment.

4. SUMMARY OF RESEARCH CONTRIBUTIONS OVER LAST 5 YEARS

- **Refereed journal publications:** 136 journal published papers over last 5 years. 382 total over career. Scopus H-Index: 71; Citations: 17,870. Google Scholars H-Index: 80; Citations: 24,273.
- **Accepted journal papers:** 6 accepted papers
- **Submitted journal papers:** 21 submitted papers
- **Books and chapters in books:** 2 books and 6 book chapters published over last 5 years
- **Patents:** 2 patents exclusively licensed (NanoXplore, Canada in 2017; and Createx Technology, China in 2017); 2 patents issued and 18 patents applied for.
- **Papers in refereed conference proceedings:** 71 conference papers published over last 5 years. 501 total Conf papers over career.
- **Published abstracts:** 178 extended abstracts & 31 contract reports published over last 5 years
- **Plenary talks at conferences, selective:** 16 over last 5 years
- **Keynote & invited talks at conferences:** 19 keynote & 15 invited talks delivered over last 5 years
- **Invited seminars at universities and research institutes:** 57 seminars delivered over last 5 years
- **Invited seminars at industrial companies:** 13 seminars delivered in companies over last 5 years
- **Invited panel discussion and/or media activity:** 6 open panel discussions over last 5 years
- **Invited extensive tutorials:** 10 extensive tutorials over last 5 years
- **Other podium presentations at conferences and workshops:** 405 podium presentations over last 5 years
- **Poster presentations at conferences and workshops:** 20 poster presentations over last 5 years

5. OTHER EVIDENCE OF IMPACT AND CONTRIBUTIONS OVER LAST 5 YEARS

Fellow Membership of Academies

- **Foreign Member**, The National Academy of Engineering of Korea 2016.03-present
- **Fellow**, The Korean Academy of Science and Technology 2012.11-present
- **Fellow**, The Academy of Science, the Royal Society of Canada 2011.11-present
- **Fellow**, The Canadian Academy of Engineering 2009.07-present

Fellow Membership of Professional Societies

- **Fellow**, The American Association for the Advancement of Science 2011.11-present
- **Fellow**, The Engineering Institute of Canada 2007.03-present
- **Fellow**, The Society of Plastics Engineers 2004.05-present
- **Fellow**, The American Society of Mechanical Engineers 2003.12-present
- **Fellow**, The Canadian Society for Mechanical Engineering 2002.05-present

Awards and Honors (55 major and 43 minor awards in total over career)

- **Distinguished Prof**, UofT, 20-25
- **TianFu Friendship Award**, Sichuan Prov, 18
- **Academician Appnmt**, Shandong Prov, 18
- **KSICT Minister Award**, MSICT, 18
- **Green-VIP Card**, Shandong Prov, 18-23
- **NSERC Sen Ind Res Chair**, NSERC, 17-22
- **Innovator Award**, CPIA, 16
- **Best Poster Award**, Foams, 16
- **Foreign Member**, Nat Academy Eng Korea, 16
- **Best Innovation Award**, AKCSE, 15
- **Honorary Guest Prof** in 5 Chinese univ (Harbin Eng U 16-present; Zhengzhou U 15-pres; Harbin Inst Tech 13-pres; Chinese Acad Sci-Ningbo 13-pres)
- **Qingdao Award**, Shandong Prov, 19
- **200 Plan of Foreign Expert**, Shandong Prov, 19-22
- **High-End Foreign Prof**, Sichuan Univ, 18-23
- **Innov Entrep Leader Award**, Qingdao Bureau, 18
- **Honorary Chair Prof**, Nat Taiwan Univ, 18-28
- **\$20M Commercialization Fund**, QIAP, 17
- **High-end Foreign Expert**, Zhengzhou Univ, 16-19
- **Int Adv Board to President**, Sichuan Univ, 16-22
- **Korean Cultural Heritage Award**, Canada, 15
- **High-End Foreign Prof**, Sichuan Univ, 13-18

Editor and Advisory Editorial Board

- **Editor-in-Chief**, J Cell Plast, 06-present
- Adv Edit Board, Engineering, 20-present
- Adv Edit Board, Polym Eng Sci, 19-present
- Adv Edit Board, Eng Sci, 18-present
- Adv Edit Board, Trans CSME, 17-19
- Adv Edit Board, Prog Polym Proc, 13-present
- Adv Edit Board, Cell Polym, 05-present
- Co Guest Editor, Carbon, on EMI shielding, 20-21
- Adv Edit Board, Adv Ind Eng Polym Res, 20-present
- Adv Edit Board, Recent Prog in Mater, 19-present
- Adv Board, Polymers, 18-present
- Adv Edit Board, Appl Sci (Appl Mater sect), 16-present
- Adv Edit Board, Int Polym Process, 13-present
- Adv Edit Board, Adv Polym Technol, 04-present

Network Leadership (selective)

- **PI for Flexible Aerogel** with 2 Profs and 1 company, \$1M, 18-23
- **PI for Nanofibril-technology** commercialization project 2 companies, \$24M, 17-20
- **PI for NSERC Senior IRC** with 3 Profs and 1 company, \$1.5M, 17-22
- **PI for NR Can Project** with 3 Profs and 5 companies, \$400K, 17-19
- **PI for NSERC SNG** with 20 Profs from 10 Can universities and 16 Can companies, \$5M, 10-15
- **PI for CFI-LEF/ORF** with 14 Profs from 10 Can universities with \$9.2M, 11-16
- **PI for Consortium** with 20+ industrial companies with \$1.5M, 03-present

Conference/Symposium/Tutorial Organizing

- Co-organizer, Interpore 2019 Con, Spain, 19
- Symp Co-Chair, IUMRS Int Conf in Asia, 16
- Conf Co-Chair, 5th, & 6th Biofoams 15,18
- Tutorials Chair in FOAMS 10-present
- 11 Foam Symp Chairs or Co-chairs of PPS2015-PPS2019, PPS31(15)-PPS37(20)
- Semi-annual CCMCP Consortium Conf 03-present
- Adv Committee, 9th Int Symp on Eng Plastics, 19
- Organizing Committee, Poly-Foam Conf, 15-19
- Conf Chair, NSERC NIPMMP-CREPEC Colloqm 15
- Organizing Committee, FOAMS 10-present

Reviewer for ~20 international journals, 7~8 conferences, 5 funding agencies (I review 20~40 papers and proposals per year); External Examiner service for 5 PhD theses (1 U of Calgary, 2 IIT-Delhi, 1 Ecole Polytechnique, and 1 U of Waterloo).

Session Chair/Moderator served 34 times in various conferences over last 5 years

Consulting Activities 21 companies over last 5 years

6. CONTRIBUTIONS TO TRAINING HIGHLY QUALIFIED PERSONNEL OVER LAST 5 YEARS

- **PDF supervision:** 11 current; 25 completed during last 5 years; 59 completed over career
- **PhD student supervision:** 36 current; 23 completed during last 5 years; 61 completed over career
- **MASc student supervision:** 1 current; 9 completed during last 5 years; 46 completed over career
- **MEng student supervision:** 2 current; 17 completed during last 5 years; 91 completed over career
- **Undergraduate student supervision:** 2 current; 155 completed during last 5 years; 408 completed over career
- **Selective list of recent graduates (co-supervision⁺)**

Name	Years	Degree	Research Project	Present Position
SG Mosanenzadeh ⁺	16-20	PhD	Insulation polyimide aerogels	PDF at UofT
S Karamikamka ⁺	16-20	PhD	Hybrid polymer-based silica aerogels	PDF at UofT
S Rezaei	14-20	PhD	Novel hybrid silica aerogels	PDF at UofT
SM Hamidinejad ⁺	15-19	PhD	Graphene-based conductive composite foams	PDF at UofT

7. RESEARCH FUNDS OVER LAST 5 YEARS (For funds during 1993-2015, only total amount listed)

Duration	Grantor	Type	Grantees	Topic	Total	To my lab
93-15	Various		Park+	Various topics on Foaming	\$43,989,428	\$27,996,011
13-16	KC	Contract	Park	Increase of the Void Fraction...	\$120,000	\$120,000
14-16	Vision Ext	Grant	Park	Composite & foam profiles for ..	\$65,000	\$65,000
14-17	Synbra	Contract	Park	Open Cell PLA Bead Foam	\$120,000	\$120,000
14-17	NSERC	CRD	Park	Development of Innovative P...	\$189,494	\$189,494
14-17	Kasai	Contract	Park	Improvement of the Cell...	\$300,000	\$300,000
14-17	Autodesk	Contract	Park	Investigation of Cell ...	\$180,000	\$180,000
15-17	Hanwha	Contract	Park	Electrical Conductivity..	\$86,000	\$86,000
15-18	Solvay	Contract	Park	Study of the foaming ability...	\$150,000	\$150,000
15-20	Various	Contract	Park	Consortium (CCMCP)	\$400,000	\$400,000
15-20	NSERC	DG	Park	Fundamentals of Multi-Func..	\$285,000	\$285,000
15-20	KEIT ATC	Contract	Park	Development of Beta Crystal ..	\$1,000,000	\$1,000,000
16-19	NSERC	CRD	Park	Investigation of Cell ..	\$257,152	\$257,152
16-17	Sabic	Contract	Park	The Development of Extrusion..	\$227,500	\$227,500
16-19	NSERC	CRD	Park	Study on the Foaming Ability..	\$214,287	\$214,287
17-20	Createx	Contract	Park	R&D of the Nanofibril..	\$4,000,000	\$4,000,000
17-22	NanoXplore	Contract	Park	NSERC IRC, Multi-Functional..	\$1,370,000	\$1,370,000
17-19	NRCan	Contract	Park+3	Development of In-Situ Foam..	\$600,000	\$600,000
17-20	Autodesk	Contract	Park	Experimental Investigation..	\$198,000	\$198,000
18-21	NSERC	CRD	Park+1	Experimental Investigation..	\$282,858	\$282,858
18-19	NSERC	RTI	Park+1	Electromagnetic shielding..	\$135,452	\$135,452
19-22	Arkema	Contract	Park+1	Study on the Foaming Ability..	\$135,000	\$135,000
19-22	JITRI	Contract	Park	The Development Project of..	\$695,450	\$695,450
20-25	NSERC	DG	Park	Nanofibril Technology for..	\$320,000	\$320,000
20-21	Fast Grant	Grant	Park	Fabrication of Superhydrophobic..	\$60,000	\$60,000
20-21	NSERC	Grant	Park	COVID 19-Scalable Production..	\$100,000	\$100,000
20-23	Inoac	Contract	Park+1	ABS/Nanofibril-Rubber..	\$390,000	\$390,000
Total					\$55,870,621	\$39,877,204