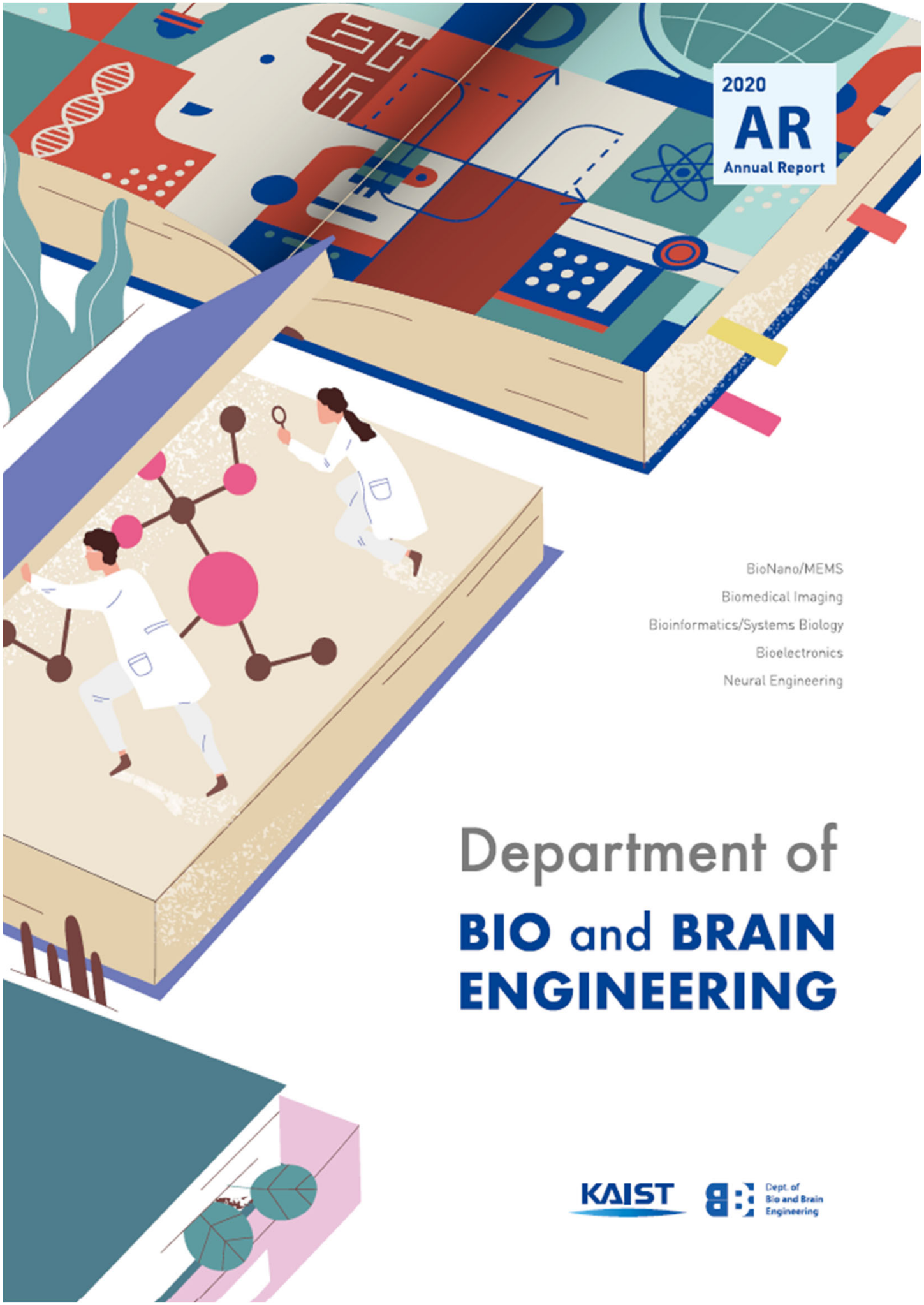


2020
AR
Annual Report

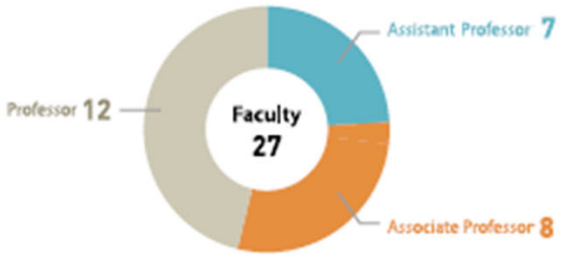
BioNano/MEMS
Biomedical Imaging
Bioinformatics/Systems Biology
Bioelectronics
Neural Engineering

Department of BIO and BRAIN ENGINEERING

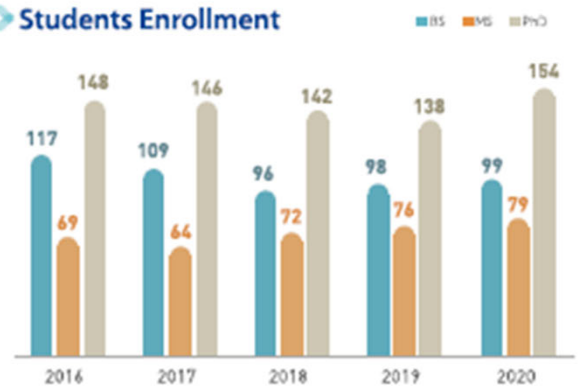
KAIST
Dept. of Bio and Brain Engineering

Statistics

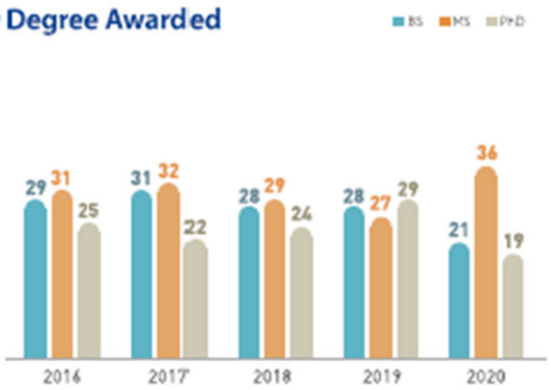
Faculty



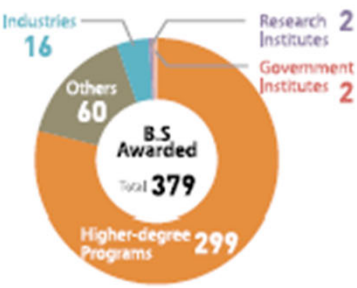
Students Enrollment

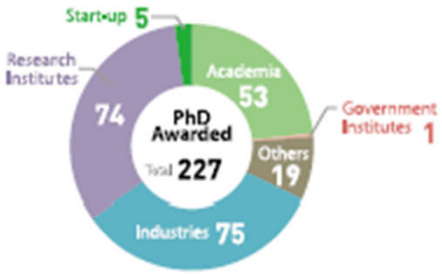


Degree Awarded

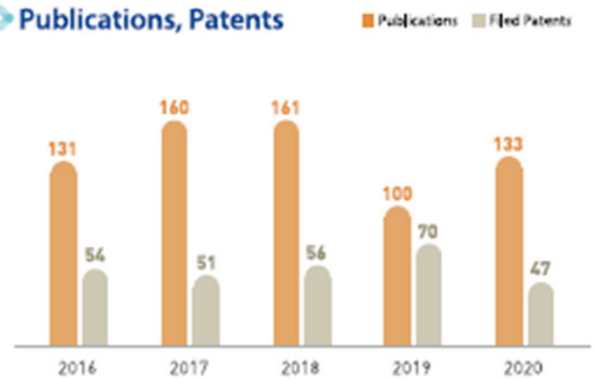


Career Status after Graduation

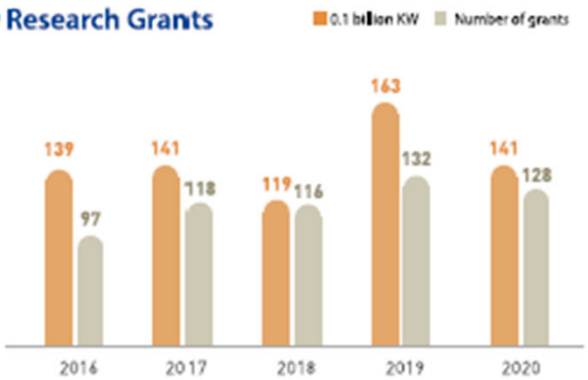




Publications, Patents



Research Grants



MS Degree Recipients

No.	Name	Thesis Title	Advisor	Term
4	Kwon, Yeji	Portable Syringe-Type Device for Colorimetric Detection of Escherichia coli Using Immuno-Magnetic Separation and Filtration	Park, Je-Kyun	2020 Winter

PhD Degree Recipients

No.	Name	Thesis Title	Advisor	Term
3	Lee, Young	Microfluidic cell culture system for in vitro model study of human intestinal follicle-associated epithelium	Park, Je-Kyun	2020 Winter
5	Son, Jaejung	Construction of 3D modular hepatic tissue using micropatterned collagen sheet for tissue-level cytotoxicity assay	Park, Je-Kyun	2020 Winter
9	Park, Juhwan	Power-free microfluidic actuator based on indirect pressurization for biological sample preparation and analysis	Park, Je-Kyun	2020 Winter

Other Awards & Honors

No.	Name	Title	Institute	Month	Advisor
4	No, Hye-won	Best Poster Presentation Award	The Korean BioChip Society	August	Park, Je-Kyun

Department of Bio and
Brain Engineering

04
Publications
(Peer-reviewed journals)

BioNano/MEMS

49. Park, J; Kim, H; **Park, JK**; "Microfluidic channel-integrated hanging drop array chip operated by pushbuttons for spheroid culture and analysis," ANALYST, vol.145, no.21, pp.6974~6980, 2020.11; DOI(https:// doi.org/10.1039/d0an01091j)

50. Kim, CH; Park, J; Kim, SJ; Ko, DH; Lee, SH; Lee, SJ; **Park, JK**; Lee, MK; "On-site extraction and purification of bacterial nucleic acids from blood samples using an unpowered microfluidic device," SENSORS AND ACTUATORS B-CHEMICAL, vol.320, 128346, 2020.10; DOI(https:// doi.org/10.1016/j.snb.2020.128346)

51. Park, J; Han, DH; Hwang, SH; **Park, JK**; "Reciprocating flow-assisted nucleic acid purification using a finger-actuated microfluidic device," LAB ON A CHIP, vol.20, no.18, pp.3346~3353, 2020.09; DOI(https:// doi.org/10.1039/d0lc00432d)

52. Cho, M; **Park, JK**; "Fabrication of a perfusable 3D in vitro artery-mimicking multichannel system for artery disease models," ACS BIOMATERIALS SCIENCE AND ENGINEERING, vol.6, no.9, pp.5326~5336, 2020.09; DOI(https:// doi.org/10.1021/acsbiomaterials.0c00748)

53. Park, J; Han, DH; **Park, JK**; "Towards practical sample preparation in point-of-care testing: user-friendly microfluidic devices," LAB ON A CHIP, vol.20, no.7, pp.1191~1203, 2020.04; DOI(https:// doi.org/10.1039/d0lc00047g)

54. Jo, Y; Park, J; **Park, JK**; "Colorimetric detection of Escherichia coli O157:H7 with signal enhancement using size-based filtration on a finger-powered microfluidic device," SENSORS, vol.20, no.8, 2267, 2020.04; DOI(https:// doi.org/10.3390/s20082267)

55. Park, YH; **Park, JK**; "Light gradient-based screening of Arabidopsis thaliana on a 384-well type plant array chip," MICROMACHINES, vol.11, no.2, 191, 2020.02; DOI(https:// doi.org/10.3390/mi11020191)

56. Lee, Y; Kim, SJ; **Park, JK**, "Chips-on-a-plate device for monitoring cellular migration in a microchannel-based intestinal follicle-associated epithelium model," BIOMICROFLUIDICS, vol.13, No.6, 064127, 2019.12; DOI(https:// doi.org/10.1063/1.5128640)

2020 Annual Report

Department of
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KAIST Dept. of Bio and Brain Engineering

291 Daehak-ro, Yuseong-gu, Daejeon 34141, Republic of Korea
Tel +82-42-350-4302~4 Fax +82-42-350-4310
http://bioeng.kaist.ac.kr