



## 第3回 講演会のお知らせ

# Spintrophoretic Mattertronics for novel Bio-MEMS/NEMS technologies

The precise delivery of bio-functionalized matters is of great interest in emerging biomedical technologies from the fundamental and applied viewpoints. Particularly, most existing single cell platforms are unable to achieve large scale operation with flexibility on cells and digital manipulation towards multiplex cell tweezers. Recently, the flexibility of magnetic shuttling technology using nano/micro-scale magnets for the manipulation of particles has gained significant advances for a versatile living cell manipulation tasks. Herein, let's call "spintrophoresis" using micro-/nano-sized Spintronic devices rather than "magnetophoresis" using bulk magnet. Especially analogy of IC chip via the electronic carriers of electron and hole has been implemented in the integrated spintrophoretic circuit platform with active and passive circuitry elements and gates based on magnetic and pseudo-diamagnetic carriers. Here I will introduce the spintrophoresis devices and integrated platform for versatile multiplexed tweezers of living cells, which enables a novel platform to address biologically relevant problems in bio-MEMS/ NEMS technologies.

講師

Department of Emerging Materials Science, DGIST, Republic of Korea

## Prof. CheolGi Kim

略歴:

Prof. CheolGi Kim is a Professor at DGIST as well as the director of "Magnetics initiative life care research center" funded by Ministry of Science and ICT in Korea, and Co-Director of Key lab for nano-Micro-technologies, VNU, Vietnam (2017 ~). He completed his Ph.D. at KAIST in Korea and postdoctoral studies at NIST in USA. He won Distinction medal from University Montpellier (France, 2014), and AUMS award (Asian Union of Magnetics Societies, 2020). Prof. CG Kim has trained a number of Ph.D students who have gone on to successful researchers in the Spintronics devices and their applications. He has done numerous revolutionary and original works on "Bio-Convergence Spin System" related with novel Spintronics devices and their biomedical applications, as proven from more than 270 publications in the reputed journals and 30 patents, along with up to 40 invited presentations in the domestic and international conferences.

2021

8/3 THU

16:00 - 17:20

オンライン

参加申込

本講演会は、どなたでも参加できます。

参加希望の方は、以下のwebページから参加登録をお願いします。

<https://www.aie.tohoku.ac.jp>
