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RESEARCH FOCUSES

- Ultrasound-responsive materials and devices
- Energy harvesting for biomedical applications
- Wearable ultrasound

DEGREE & EDUCATION

Ph.D. student in Advanced Material Science & Engineering **Mar 2021 – Present**

Sungkyunkwan University (SKKU), Advisor: Prof. Sang-Woo Kim

B.S. in Chemistry/ Chemical Engineering **Mar 2015 – Feb 2021**

Sungkyunkwan University (SKKU), Suwon, Republic of Korea

PUBLICATIONS

PEER-REVIEWED JOURNALS

Notes: # indicates equally contributing authors. * indicates the corresponding author(s).

First Authored Papers

1. **Y. Chung#**, J.-M. Jeong#, J.-H. Hwang#, Y.-J. Kim, B.-J. Park, D. S. Cho, Y. Cho, S. J. Suh, B.-O. Choi, H. Park*, H.-J. Yoon*, S.-W. Kim*, Gigantic triboelectric power generation overcoming acoustic energy barrier using metal-liquid coupling, ***Joule*** 8, 2681-2695 (2024)
2. **Y. Chung#**, H. Yuan#, Z. Wang, J.-M. Jeong, B.-J. Park, J.-H. Hwang, S.-J. Suh, B.-O. Choi, H. Park, Y.-J. Kim*, K. Dai*, S.-W. Kim*, Acoustic Tunable Battery-Free Implants Based on Sustainable Triboelectric Nanogenerators with Metal-Polymer Intermixing Layers, ***Advanced Energy Materials*** 15, 2403712 (2025) *selected as the inside front* ***cover image*** *of the journal issue*
3. H. Yuan#, **Y. Chung#**, Z. Wang, H. Li, H. Zhang, S.-W. Kim*, K. Dai*, Multi-frequency Modulation Simultaneous Wireless Information and Power Transfer for Triboelectronic Monitoring System, ***Advanced Science***, e10427 (2025)
4. **Y. Chung#**, S. Choudhury, Y.-J. Kim, I.-Y. Suh, K. Dai*, S.-W. Kim*, Ultrasound-Powered, Battery-Free Implants via Triboelectric Energy Harvesting, ***Advanced Materials Technologies***, e01451 (2025)
5. Y.-J. Kim#, **Y. Chung#**, J.-H. Hwang, J.-M. Jeong, B. Kim, D. Kang, B.-O. Choi, H.-J. Yoon*, S.-W. Kim*, Acoustic Impedance-tailored high performance ultrasound-driven triboelectric nanogenerators, ***Advanced Energy Materials***, *under review*

Contributing Authored Papers

6. J.-M. Jeong#, J.-H. Hwang#, B.-J. Park#, **Y. Chung**, D. S. Cho, H. M., H.-m. Park, Z. L. Wang, B.-O. Choi*,

S.-W. Kim*, Wireless, Battery-Free High-Frequency Neurostimulator via Millimetric Ultrasound-driven Triboelectric Nanogenerator for Obesity Treatment, TBD, *under review*

7. I. Jeon#, B. Kim#, **Y. Chung**, B.-J. Park, S.-W. Kim*, J. H. Kim*, Ultrasound-induced amorphization in solid polymer electrolytes for ambient temperature operation, TBD, *under review*

8. Y.-J. Kim#, J. Hwang#, B.-J. Park, **Y. Chung**, S. H. Choi, S.-H. Kim, D. H. Park, Y. Lee, S. Yoo, J. Park, J. C. Won, S. H. Nam, B.-O. Choi, S.-W. Kim*, Y. H. Kim*, Structurally Tuned Porous Polyimide Composites for High-Performance Ultrasound-Driven Triboelectric Implants, TBD, *under review*

9. Y.-J. Kim#, S.-H. Kim#, B.-J. Park#, J. Jeon, D. Kang, **Y. Chung**, J.-H. Hwang, H.-J. Yoon, K. H. Lee*, B.-O. Choi*, S.-W. Kim*, Wireless acousto-electric pain control with monolithic bioresorbable polymer, ***Nature Biomedical Engineering***, *accepted*

10. D. Kang#, B-J. Park#, J.-H. Hwang#, Y.-J. Kim, S.-H. Kim, H. W. Kim, K. J. Yu, J. Jeon, H. Y. Lee, **Y. Chung**, S. H. Nam, B.-O. Choi*, S.-W. Kim*, In-body current path manipulation with minimal attenuation, ***Science Advances*** 11, eadx5922 (2025)

11. H. Kim#, S. Jeon, Y. S. Cho, C. H, S. N, J. Lee, **Y. Chung**, J. Kang, S.-W Kim, D. Choi*, Polydopamine-coated iron-nickel alloy and epoxy composites for electromagnetic interference shielding, ***Journal of Applied Polymer Science*** 141, e56187 (2024)

12. Y.-J. Kim#, Z.-Y. Huo#*, H. Dai, D.-M. Lee, I.-Y. Suh, J.-H. Hwang, **Y. Chung**, H. Y. Lee, Y. Du, W. Ding, X. Wang, S.-W. Kim*, Body-coupled energy enabling unrestricted microbial disinfection using polymer nanorods, ***Nature Water*** 2, 360-369 (2024), *Covered by News & Views in* ***Nature Water***, *Highlighted in* ***Nature*** 628, 693 (2024)

13. Y.-J. Kim#, J. Lee#, J.-H Hwang#, **Y. Chung**, B. J. Park, J. Kim, S.-H. Kim, H.-J. Yoon, S.-M. Park*, S.-W. Kim*, High-performing and capacitive-matched triboelectric implants driven by ultrasound, ***Advanced Materials*** **36**, 2307194 (2024), *Covered by* ***Forbes****, Parkinson's News Today, News-medical, etc.*

PATENTS:

	Application (KOREA)	Registration (KOREA)	Application (US)	Registration (US)
Patent (#)	-	17	5	2

REFERENCES:

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