Curriculum Vitae

Prof. Soon-Gil Yoon

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Affiliation: Department of Materials Science and Engineering, Chungnam National University, Daeduk Science Town, 305-764, Daejeon, Korea

♣ Academic Carrier:

1978. 3 – 1982. 2: Dept. of Metallurgical Engineering, Yeonsei University, BS.
1983. 3 – 1985. 2: Dept. of Materials Science and Technology, Korea Advanced Institute of Science and Technology (KAIST), M.S.
1985. 3 – 1988. 8: Dept. of Materials Science and Technology, KAIST, Ph.D. Supervisor: Prof. Ho-Gi Kim

♣ A carrier record:

1990. 2 – Present: Department of Materials Engineering, Chungnam National University, Professor
1992. 7 – 1993. 7: New Jersey State University (Rutgers University): Visiting Professor. Supervisor: Prof. Amhaid Saffari
1999. 8 – 2000. 8: North-Carolina State University: Visiting Professor. Supervisor: Prof. Anguis Kingon
2006. 4 – 2013. 3: Director of BK21 project in Chungnam National University
2008. 2 – Present: Editor-in-Chief, The Open Biomaterials Journal
2008. 2 – Present: Editorial Board Member, The Open Materials Science Journal
2015. 8 – Present: Editorial Board Member, Scientific Report Journal
2013. 9 – Present: Director of BK plus 21 project in Chungnam National University
2013. 11 – 2018. 11: Principle Investigator of Basic Research Lab. supported from NRF.

♣ Research Area: 1) Thin film Capacitors using BMNO dielectric films on Graphene
2) Organic/Inorganic Perovskite Halide Thin Films grown *via* Chemical Vapor Deposition
3) Transparent conducting oxide films: AZO/(Ag, Au)/AZO

multilayer via Sputtering

4) Perovskite Solar Cells using graphene top- and bottom-electrode
5) Fusion Technology of Solar, Thermoelectric, and Piezoelectric energy harvesting using single structure.
6) Antibacterial activity using Al-doped ZnO, $ZnAl_2O_4$, and $Si_{1-x}Zn_xO$ thin films with antireflection
7) *8-inch-scale* graphene grown directly at 150 ^oC without transfer *via* PATCVD
8) Electrical performance of N-doped and B-doped graphene FETs based on transfer-free, 8-inch-scale, high-quality monolayer graphene grown directly at 100 °C.
9) Energy harvesting using piezoelectric organic/inorganic perovskite $MAPbI_3$, $MASnI_3$, and $MABrI_3$ and Flexoelectricity of Zn-Al:LDH nanosheets *via* most facile synthesis
10) Photodetectors using lead-free organic/inorganic halide perovskite thin films via chemical vapor deposition

♣ Selected Papers (Corresponding Authors): Peer Reviewed SCI Papers

1) Jun-Ku Ahn, Kyung-Woo Park, Hyun-June Jung, and **Soon-Gil Yoon***, "Phase-Change InSbTe Nanowires Grown *in Situ* at Low Temperature by Metal-Organic Chemical Vapor Deposition (MOCVD) ", **Nano Letters**, **10**, 472-477 (2010). IF: 12.219
2) Thanh-Tung Duong, Quoc-Dung Nguyen, Soon-Ku Hong, Dojin Kim, **Soon-Gil Yoon*** and Thanh-Huy Pham, "Enhanced Photoelectrochemical Activity of the TiO_2/ITO Nanocomposites Grown onto Single-Walled Carbon Nanotubes at a Low Temperature by Nanocluster Deposition" **Advanced Materials**, 23, 5557 (2011). IF: 32.086
3) Hyun-June Jung, **Soon-Gil Yoon***, Soon-Ku Hong and Jeong-Yong Lee, "Transparent Nanoscale Floating Gate Memory Using Self-Assembled Bismuth Nanocrystals in $Bi_2Mg_{2/3}Nb_{4/3}O_7$ (BMN) Pyrochlore Thin Films Grown at Room Temperature", **Advanced Materials**, **24**, 3396-3400 (2012). IF: 32.086
4) Byeong-Ju Park, Jin-Seok Choi, Hyun-Suk Kim, Hyun-You Kim, Jong-Ryul Jeong, Hyung-Jin Choi, Hyun-June Jung, Min-Wook Jung, Ki-Seok An, Hyun-jung Shin, Myung-Mo Sung, and **Soon-Gil Yoon***, “Realization of

Large-Area Wrinkle-Free Monolayer Graphene Films Transferred to Functional Substrates", **Scientific Reports**, 5, 9610-9617 (2015).

5) Yun-Jeong Kim, Tran-Van Dang, Hyung-Jin Choi, Byeong-Ju Park, Ji-Ho Eom, Hyun-A Song, Daehee Seol, Yunseok Kim, Sung-Ho Shin, Junghyo Nah, and **Soon-Gil Yoon***, "Piezoelectric properties of $CH_3NH_3PbI_3$ perovskite thin films and their applications in piezoelectric generators", **Journal of Materials Chemistry A**, 4, 756-763 (2016). IF: 14.511
6) Byeong-Ju Park, Jin-Seok Choi, Ji-Ho Eom, Hyunwoo Ha, Hyun You Kim, Seonhee Lee, Hyunjung Shin, and **Soon-Gil Yoon***, "Defect-Free Graphene Synthesized Directly at 150 °C *via* Chemical Vapor Deposition with No Transfer", **ACS Nano**, 12, 2008-2016 (2018). IF: 18.027
7) Swathi Ippili, Venkatatraju Jella, Jaegyu Kim, Seungbum Hong, and **Soon-Gil Yoon***, "Enhanced piezoelectric output performance via control of dielectrics in Fe^{2+}-incorporated $MAPbI_3$ perovskite thin films: Flexible piezoelectric generators", **Nano Energy** 49, 247-256 (2018). IF: 19.069
8) Venkatatraju Jella, Swathi Ippili, Ji-Ho Eom, Yun-Jung Kim, Hye-Jin Kim, and **Soon-Gil Yoon***, "A Novel Approach to Ambient Energy (Thermoelectric, Piezoelectric and Solar-TPS) Harvesting: Realization of a Single Structured TPS-Fusion Energy Device using $MAPbI_3$", **Nano Energy** 52, 11-21 (2018). IF: 19.069
9) Venkatatraju Jella, Swathi Ippili, Ji-Ho Eom, Jihoon Choi, and **Soon-Gil Yoon***, "Enhanced output performance of a flexible piezoelectric energy harvester based on stable $MAPbI_3$-PVDF composite films", **Nano Energy** 53, 46-56 (2018). IF: 19.069
10) Min-Ju Choi, Ji-Ho Eom, **Soon-Gil Yoon*** *et al.* "Most facile synthesis of Zn-Al:LDHs nanosheets at room temperature *via* environmentally friendly process and their high power generation by flexoelectricity", **Materials Today Energy** 10, 254-263 (2018).
11) Venkatraju Jella, Swathi Ippili, Ji-Ho Eom, S. V. N. Pammi, Jang-Soo Jung, Van-Dang Tran, Van Hieu Nguyen, Artavazd Kirakosyan, Seokjin Yun, Deul Kim, Moon Ryul Sihn, Jihoon Choi, Yun-Jeong Kim, Hye-Jin Kim, and **Soon-Gil Yoon*, "**A Comprehensive Review of Flexible Piezoelectric Generators

Based on Organic-Inorganic Metal Halide Perovskites (**Review Paper**)", **Nano Energy** 57, 74-93 (2019). IF: 19.069

12) Swathi Ippili, Venkatraju Jella, **Soon-Gil Yoon*** et al, "An eco-friendly flexible piezoelectric energy harvester that delivers high output performance is based on lead-free $MASnI_3$ films and $MASnI_3$-PVDF composite film", **Nano Energy**, 57, 911-923 (2019). IF: 19.069

13) Van Dang Tran, S. V. N. Pammi, Byeong-Ju Park, Yire Han, Cheolho Jeon, and **Soon-Gil Yoon***, "Transfer-free graphene electrodes for superflexible and semi-transparent perovskite solar cells fabricated under ambient air", **Nano Energy**, 65, 104018-104025 (2019). IF: 19.069.

14) S. V. N. Pammi, Reddeppa Maddaka, Van-Dang Tran, Ji-Ho Eom, Vincenzo Pecunia, Sutripto Majumder, Moon-Deock Kim, and **Soon-Gil Yoon***, "CVD-deposited hybrid lead halide perovskite films for high-responsivity, self-powered photodetectors with enhanced photo stability under ambient conditions", **Nano Energy**,74, 104872-104883 (2020). IF: 19.069.

(15) Yire Han, Byeong-Ju Park, Ji-Ho Eom, Venkatraju Jella, Swathi Ippili, S. V. N. Pammi, Jin-Seok Choi, Hyunwoo Ha, Hyuk Choi, Cheolho Jeon, Kangho Park, Hee-Tae Jung, Sungmi Yoo, Hyun You Kim,* Yun Ho Kim,* and **Soon-Gil Yoon***, "Direct Growth of Highly Conductive Large-Area Stretchable Graphene", **Advanced Science**, 8, 20033697 (2021). IF: 17.521

(16) Yire Han, Ji-Ho Eom, Jang-Su Jung, and **Soon-Gil Yoon***, "Unprecedented flexibility of in-situ layer-by-layer stacked graphene with ultralow sheet resistance", **Nano Today**, 37, 101105 (2021). IF: 20.722.

(17) Swathi Ippili, Venkatraju Jella, Alphi Maria Thomas, Chongsei Yoon, Jang-Su Jung, and **Soon-Gil Yoon***, "ZnAl-LDH-induced electroactive β-phase and controlled dielectrics of PVDF for a high-performance triboelectric nanogenerator for humidity and pressure sensing applications", **Journal of Materials Chemistry A**, 9, 15993-16005 (2021). IF: 14.511.

(18) Chongsei Yoon, Swathi Ippili, Venkatraju Jella*, Alphi Maria Thomas, Jang-Su Jung, Yire Han, Tae-Youl Yang, Soon-Gil Yoon*, Giwan Yoon*, "Synergistic contribution of flexoelectricity and piezoelectricity towards a stretchable robust nanogenerator for wearable electronics", **Nano Energy**, 91, 106691 (2022). IF: 19.069.

(19) Swathi Ippili*, Venkatraju Jella*, Jaegyu Kim, Seungbum Hong, Hyun-Suk Kim, Soon-Gil Yoon*, "High-power nanogenerator of 2D-layered perovskite in a polymer matrix for self-charging battery-powered electronics", **Nano**

Energy, 103, 107781 (2022). IF: 19.069.

(20) Swathi Ippili*, Venkatraju Jella*, Jeong Min Lee, Jang-Su Jung, Dong-Hyun Lee, Tae-Youl Yang, and Soon-Gil Yoon*, "ZnO-PTFE-based antimicrobial, anti-reflective display coatings and high-sensitivity touch sensors", Journal of materials Chemistry A, 10, 22067 (2022), IF: 14.511.

(21) Swathi Ippili, Jong-Heon Kim, Venkatraju Jella,* Subhashree Behera, Van-Hoang Vuong, Jang-Su Jung, Yujang Cho, Jaewan Ahn, Il-Doo Kim, Yun Hee Chang,* Hyun-Suk Kim,* and Soon-Gil Yoon*, "Halide double perovskite-based efficient mechanical energy harvester and storage devices for self-charging power unit", **Nano Energy**, 107, 108148 (2023). IF: 19.069.

(22) Van-Hoang Vuong, S.V.N. Pammi, Swathi Ippili, Venkatraju Jella, Trinh Nguyen Thi, Kedhareswara Sairam Pasupuleti, Moon-Deock Kim, Min Ji Jeong, Jong-Ryul Jeong, Hyo Sik Chang, Soon-Gil Yoon*, "Flexible, stable, and self-powered photodetectors embedded with chemical vapor deposited lead-free bismuth mixed halide perovskite films", Chemical Engineering Journal, 458, 141473 (2023), IF: 16.744.

♣ Peer Reviewed SCI Papers: 1990-Present: 406 papers