

# Sung Kyu Ha

- 2019 [연구우수교수](#)

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## Profile

- 2019, Guest Editor of Energies "Application of Composite Materials for Energy Devices"  
[https://www.mdpi.com/journal/energies/special\\_issues/ACM\\_ED](https://www.mdpi.com/journal/energies/special_issues/ACM_ED)
- 2019, Guest Editor of Energies "Applications of Nanocomposites for Energy Generator/Harvester Devices"  
[https://www.mdpi.com/journal/energies/special\\_issues/AN\\_EGHD](https://www.mdpi.com/journal/energies/special_issues/AN_EGHD)
- 2019-present, Editor, ChemEngineering  
<https://www.mdpi.com/journal/ChemEngineering/editors>
- 2016-present, Advisory Professor, LG Electronics Manufacturing Technology Center Future-Technology-Forum
- 2016, LIFE ACHIEVEMENT AWARD WINNER 2016, JEC-WORLD, PARIS
- 2008-present, Editorial Board, Journal of Reinforced Plastics and Composites
- 2001-2002; 2008-present, Visiting Professor, Stanford University
- 1991-present, Professor of Mechanical Engineering, Hanyang University
- 1991-present, Member, Korean Society of Mechanical Engineers
- 1991-present, Member, American Society of Mechanical Engineering
- 1991-present, Member, Society of Advanced Manufacturing and Processing Engineering
- 1991-present, Editorial Board, The Korean Society of Composite Materials
- 1989-1991, Research Associate, Stanford University
- Ph.D. Stanford University, 1988
- M.S. Stanford University, 1985
- B.Eng. Hanyang University, 1983

## Research Topic

- Mass Production Process for Composite Automotive Parts
- Innovative Additive Manufacturing (3D Printing) of Composites
- Fatigue Life Prediction of Composites
- Braided, Woven, & Non-Crimp Fabrics
- Enhance Impact Resistance of Composite Structures
- Short Fiber Composites
- Thin- vs Thick-Ply Laminates
- Manufacturing Process
- Innovative Design of Wind Turbine Blades
- Design of Yacht Mast & Rigging System
- Flywheel Energy Storage System
- Finite Element Methods and Analysis of Composite Structures

## Industry-Academia collaboration Projects

- Characterization of Thermoplastic Composite material (2014.4 ~ , Arkema, France)
- Global-local Multi-scale Based Design Tool Development for Composites Wing(2016.2 ~ 2019.1, Embraer, Brazil)
- Development of Composites Chassis Sub frame (2017.1 ~ 2018.4, Hyundai automotive, Korea)
- Development of Non-Crimp Fabrics for Lexus LFA (Supported by TOYOTA, Japan)
- Innovative Composites Process for Automotive, (Supported by Plastic Omnium, France)
- Design and Manufacturing of Flywheel Energy Storage System (Supported by Beacon Power, USA)
- Durability of Braided Composites (In collaboration with Nanyang Technological University, Singapore)
- Durability of Composites Aerospace Structures (Supported by DSO National Laboratory, Singapore)
- Innovation of Wind Turbine Blades (Supported by ACCIONA Windpower, Spain)
- Resin Characterization for Wind Turbine Blades (Supported by BASF, Germany)
- Innovative Design of Non-Crimp Fabrics: Unbalanced Layup (Supported by Chomarac, France)
- Fatigue Life Prediction for Short Fiber Composites (Supported by BOSCH, Germany)
- Design of Yacht Mast and Rigging System (In collaboration with Future Fibres, Spain)
- Composite Flexible Riser (Preliminary study with Technip, France)
- Design and Manufacturing of Composites Artificial Disc (In collaboration with Spinal Kinetics, USA)
- Design Optimization of Composite Tennis Racket (In collaboration with Babolat, France)

Find More <https://sites.google.com/site/hyucomposites/Project>

## Papers

- “Load mitigation of wind turbine blade by aeroelastic tailoring via unbalanced laminates composites”, Composite Structures, 2015

<https://www.sciencedirect.com/science/article/pii/S0263822315002159>

- "Ultimate strength prediction of braided textile composites using a multi-scale approach", Journal of Composite Materials, 2015  
<https://journals.sagepub.com/doi/full/10.1177/0021998314521062>
- "Long-term Fatigue Strength Prediction of CFRP Structure Based on Micromechanics of Failure", Journal of Composite Materials, 2008  
<https://journals.sagepub.com/doi/abs/10.1177/0021998307088611>
- "Design of a Hybrid Composite Flywheel Multi-rim Rotor System Using Geometric Scaling Factors", Journal of Composite Materials, 2008  
<https://journals.sagepub.com/doi/abs/10.1177/0021998308088590>
- "Design and manufacture of a composite flywheel press-fit multi-rim rotor", Journal of Reinforced Plastics and Composites, 2008  
<https://journals.sagepub.com/doi/abs/10.1177/0731684407086625>
- "Micro-Mechanics of Failure (MMF) for Continuous Fiber Reinforced Composites", Journal of Composite Materials, 2008.9  
<https://journals.sagepub.com/doi/abs/10.1177/0021998308093911>

## 특허(Patent)

- Composite rotor for high-speed rotation and assembling method of the same  
<https://patents.google.com/patent/KR101290887B1/en?q=10-1290887>
- Prosthetic Intervertebral Disc  
<https://patents.google.com/patent/US7905921B2/en?q=7%2c905%2c921>
- Method and a Kit for Inserting Prosthetic Intervertebral Discs into a Spine  
<https://patents.google.com/patent/US8038715B2/en?q=8%2c038%2c715>

## Contact Information

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