

# IEEE SLED 2021

## IEEE International Symposium on Sensorless Control for Electrical Drives

### Proposal

Presented at Apr. 26, 2020

Modified at Oct. 15, 2020



# Outlines

01

## Topics:

- ▶ Sensorless Control of Electric Machines
- ▶ Sensorless Control of Electric Drive Systems
- ▶ Machine and System Design for Sensorless Control
- ▶ Reliability and Assessments
- ▶ Emerging Applications of Sensorless Control

02

## Place:

- ▶ Seoul, Korea

03

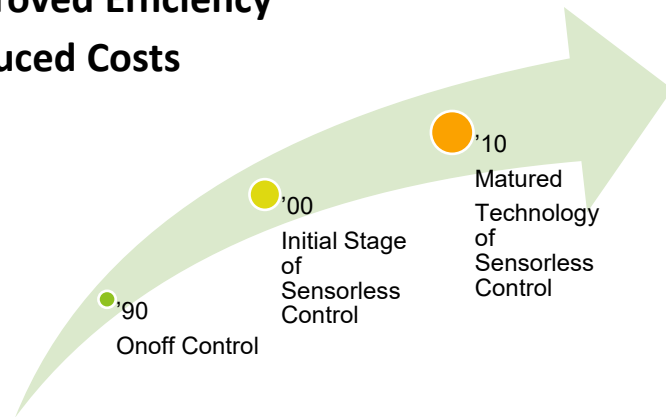
## Date:

- ▶ Dec. 16-18, 2021 (TBD)

# Growth of Industries with Sensorless Control

## • Onoff Control >> Sensorless Vector Control

- Improved Efficiency
- Reduced Costs



## • Typical Appliance Products

### with Sensorless Control

- Refrigerators
- Air Conditioners
- Vacuum Cleaners
- And Others



# Why Seoul?

- Major Industries Mainly Using “Sensorless Control”
  - Seoul is Mecca of Sensorless Control!
  - One Sub-Billion Units with Sensorless Control in One Year are designed and manufactured in the world factories.



# Our General Chair

## We Create Novel Arts of Sensorless Control



Seung-Ki Sul received the B.S., M.S., and Ph.D. degrees in electrical engineering from Seoul National University, Seoul, Korea, in 1980, 1983, and 1986, respectively.

He developed many sensorless control methods for ac electric machines. And he also invented the commercial 'sensorless washing machine' for the first time in the world.

### Work Experience

1986-1988, Associate Researcher, University of Wisconsin, Madison.

1988-1990, Principal Research Engineer, Gold-Star Industrial Systems Company.

1991-Curent, Professor, Seoul National University

2005-2007, Vice Dean, Seoul National University

2008-2011, President, the Korea Electrical Engineering and Science Research Institute

2017 William E. Newell Power Electronics Awards

**SEUNG-KI SUL**

**IEEE SLED 2021**

- **General Chairs**
  - Seung-Ki Sul, Seoul National University, Korea
- **Technical Program Committee**
  - Jung-Ik Ha, Seoul National University, Korea
  - Takashi Kosaka, Nagoya Institute of Technology, Japan
  - Gaoling Wang, Harbin Institute of Technology, China
  - Jinyoeng Moon, Florida State University, USA
- **Steering Committee**
  - Fernando Briz, University of Oviedo, Spain
  - Bulent Sarlioglu, University of Wisconsin-Madison, USA
  - Marko Hinkkanen, Aalto University, Finland

## Sensorless Control of Electric Machines

- Position Sensorless Control
- Electrical-Sensorless Control
- Thermal or Other-Sensorless Control

## Sensorless Control of Electric Drive Systems

- Robots or Motion Systems
- Electric Vehicles or Transportations

## Machine and System Design for Sensorless Control

- Machine Design
- System Considerations and Issues

## Reliability and Assessments

- Reliability Improvements
- Performance Assessments

## Emerging Applications of Sensorless Control

- Energy and Robotic Applications
- Aerospace Applications
- Sensorless Control of Power Converters
- Other Applications

# Sponsors (TBD)

IEEE SLED 2021

- IEEE : Institute of Electrical and Electronics Engineers
- IEEE IAS : IEEE Industry Applications Society
- IEEE IES : IEEE Industrial Electronics Society
- IEEE PELS : IEEE Power Electronics Society
- KIPE: The Korean Institute of Power Electronics
  - Technical Co-Sponsor
  - For Local Sponsors/Donations





- **Dates:**

- Dec. 16-18, 2021

- **Draft Program:**

- Dec. 16, Thursday:

- Technical Tour: SAMSUNG, LG, or Hyundai (for all attendees)
- Reception in evening

- Dec. 17, Friday:

- Welcome Speech, Keynote Speech
- Oral and Post Sessions 1, 2
- Banquet in evening

- Dec. 18, Saturday:

- Oral and Post Sessions 3, 4

# Important Dates (TBD)

- **Mar. 2021 (IEEE APEC):**  
Report on SLED confirmation to IEEE IAS IDC/PELS TC3
- **Mar. 28, 2021:**  
Announcement of Schedule and Call for Papers  
**>> COVID situation will be considered.**
- **May 31, 2021: Digest Submission Site Open**
- **Jul. 1, 2021: Digest Submission Deadline**
- **Aug. 30, 2021: Notification of Acceptance**
- **Oct. 10, 2021: Due of Final Paper and Registration**
- **Dec. 16-18: Conference Dates**

- **Conference Site**
  - TBD E-mail: TBD
- **Contact Persons**
  - **General Chair**
    - Prof. Seung-Ki Sul
      - Department of Electrical and Computer Engineering, Seoul National University, Korea
      - Telephone: +82-2-880-7243, Fax: +82-2-878-1452
      - Email address: [sulsk@plaza.snu.ac.kr](mailto:sulsk@plaza.snu.ac.kr) <http://spec.snu.ac.kr>
  - **TPC Chair**
    - Prof. Jung-Ik Ha
      - Seoul National University, Korea, Tel: +82-10-4932-1428
      - Email address: [jungikha@snu.ac.kr](mailto:jungikha@snu.ac.kr)

- **APEC, Denver, Apr. 7-9, 2021**
- **IEMDC, CT, May 16-19, 2021**
- **ECCE Asia, Singapore, May 24-27, 2021**
- **ITEC (Chicago, June 23-25, 2020)**
- **ECCE, Vancouver, Oct. 9-14, 2021**
- **EPE/ECCE-Europe, Dec. 6-10, 2021**
- **IEEE SELD, Seoul, Dec. 16-18, 2021**

**IEEE SLED 2021**  
**SeouL**

**Thank You**