IEEE PELS Ph.D. Thesis Talk (P3 Talk)
Guidebook 2026

1. Description

The IEEE PELS Education Digital Media Committee invites video submissions for the IEEE PELS Ph.D. Thesis Talk Award. The goal of this competition is to showcase Ph.D. projects to the entire power electronics community - both in academia and industry. The Ph.D. Thesis Talk can be up to 3 minutes long. Five IEEE PELS P3 Talks will be awarded each year.

2. Eligibility

- All Ph.D. graduates across the world are eligible, if
    - One has received the Ph.D. or doctoral certificate AFTER March 31st of the year preceding the award (i.e., March 31st, 2025). OR
    - ▪ One has a proof of the final thesis defense AFTER March 31st of the year preceding the award (i.e., March 31st, 2025).
- The applicant must be an IEEE Power Electronics Society (PELS) Member (Student Member or Regular Member).
- In order to be eligible, the applicant should sign a form to express the consent that the video may be published by IEEE PELS, and assure that the video does not contain otherwise copyrighted or confidential material.

The topic of the Ph.D. thesis should be in one of the focus areas of the IEEE PELS. Potential topics include, but are not limited to:

- Power electronic devices (Si, wide bandgap, and/or ultra wide bandgap) and applications
- Power conversion topologies, modulation, and control
- Modeling and control of components, converters and systems
- Rotating/linear electro-mechanical devices and drive systems
- Passive components and materials
- Power electronic packaging, integration, and advanced manufacturing
- Reliability, diagnostics, prognostics, and health management
- Electromagnetic interference (EMI) and electromagnetic compatibility

(EMC)
- Thermal management, advanced cooling technologies
- Renewable and alternative energy
- Smart grids, micro-grids, and utility applications
- Electrical energy storage
- Energy conversion for Information Technology and communication systems, cyber security
- Big data and machine learning applications in energy conversion
- Energy harvesting
- Energy efficiency for residential, commercial and industrial applications
- Wireless power transfer (WPT)
- Lighting applications and displays
- Transportation electrification
- High power/voltage power conversion
- High voltage isolation and lightning strike protection

3. Schedule

Open Submission: 1 January 2026
Deadline to Apply: 30 April 2026
Judging Phase: 30 April - 31 May 2026
Winner Notified: 15 June 2026

4. Submission Guidelines

The applicant will upload a video to the submission portal OR provide a link to the video during the submission process. The video should summarize the Ph.D. research. The length of the video must **NOT** exceed **3 minutes (it is a strict rule)**.

Submission requires the following information:

- Name (contact info)
- University
- IEEE Membership Number
- Date of Graduation
- Proof of Ph.D. Defense/Degree
- Thesis Title
- Brief abstract (< 200 words)
- Keywords (3-5)

All submissions must be in English. Translation of the certificate/diploma or a proof letter from a University/Institute/Ph.D. supervisor may be required.

5. Judging Criteria

Each submission will be reviewed by at least three judges from across the world to score and rank the video submissions. Reviewers will be asked to score the video submissions according to the judging rubric given below.

The winners will be identified based on the total score comprised of the following four aspects with their respective category weights:

- Problem definition (20%)
- Design methodology (20%)
- Achieved outcomes (20%)
- Quality of video and presentation (40%)

Notes: Please try to highlight the research content and contribution, instead of the received awards/achievements. English accent will not influence the scores as long as the voice in the video can be clearly understood.

Judging Rubric

(On the scale of 1 to 5)

1 - Not satisfactory, 2 - Satisfactory, 3 - Good, 4 - Very good, 5 - Excellent

Judging Items		Scores
Problem definition	Research objectives, problems, and hypothesis are clearly discussed	
	The contents are rich in engineering judgment and insight	
Design methodology	Methods are technically and mathematically accurate	

	The work is well supported with analysis and experimental evidence (e.g., prototype, application demonstrations, etc.)	
Achieved outcomes (contribution)	The work has a meaningful contribution to the field (e.g., interesting to readers, stimulating new ideas, providing publications, disseminating results)	
	The work is valuable for practicing engineers or researchers	
Quality of video and presentation	The video was presented within 3 minutes. The presenter personally appeared in the video. The use of English was clear, concise, and correct.	
	The video presented the material in a well organized way - from framing the problem to presenting the proposed solution	
	The video effectively used visual aids (figures, tables, charts, layout, etc.) to improve the efficacy of video and presentation	
	The video and audio quality were adequate (e.g., resolution, clear audio, design)	

6. Presentation of /Awards

A certificate and a monetary award of US $1,000 will be awarded to each of the top five presenters at the Annual IEEE Energy Conversion Congress and Exposition (ECCE).

7. Video Guidelines

- Prepare a video that highlights your Ph.D. thesis and its contribution. The length of the video should NOT exceed 3 minutes. It is suggested that the video should begin with a “title page” that includes the title of the

video/thesis, the name of the applicant (the Ph.D. student / graduate), the advisor's name, and the university/affiliation.

- The video should be a live recording where the presenter appears on the screen most of the time, and uses displays to explain the main points of his/her research (take the previous awarded videos as examples). **Only voice over powerpoint video presentations is NOT recommended**. An interactive presentation is HIGHLY recommended (not simply just show the presenter aside video).
- All entries must be submitted in English.
- The video resolution should be high, along with high quality audio.
- Video must be in one of the following formats for upload (note: video can be uploaded online platforms (e.g. YouTube) and a link can also be submitted. Please be aware that some video platforms may not be accessible from certain regions/countries; and it is the applicant's responsibility to ensure the video is accessible everywhere.

  Video Formats: AVI, MOV, WMB, or MP4 (MP4 format is preferred)
- Use of copyrighted materials must be avoided. Proper citations/references to the materials should be included, including your own publications. It is the applicants' responsibility to resolve any copyright issues before submission.

8. Helpful Guidelines for Creating Videos

Following information is provided to assist participants in developing a good video that presents the project in an engaging way.

- **How to organize:**

  Effective presentation should convey the following five things about your thesis work:

  A. What is the problem and why is it important to solve it? (Problem Statement)
  B. What has been done so far to solve it? (State of the Art)
  C. What have you done with your methods that is different from what others have done so far? (Methodologies)
  D. What value does your approach add to the body of knowledge and how does it advance the field? (Significance of Results)
  E. Where do we go from here? (Future Plan)

  The applicants are suggested to present the thesis like a story. It's not

easy to condense the thesis into 3 minutes. Breaking your presentation down into smaller sections may help to smooth the presentation. For instance, the presentation may include:

- *Introduction*:
  Create an interesting opening sequence that captures the audience's attention. Use the introduction to give a brief overview of the Ph.D. project, explain the problem(s) that have been addressed, the lack or limitations of prior-art solutions, and define the impact of the proposed solutions.
- *Body*:
  Use the main body of the video to present your design methodology and your solution. Support the video presentation with hardware/software prototype images and engineering analysis data to strengthen the technical content of the video.
- *Conclusion*:
  Summarize the main results of the project/the video presentation, the expected impact to sponsor/other, and the knowledge gained in this project. Wrap up the video with a memorable ending.

Please note that all of the above are suggestions to structure your video presentation. You're expected to produce and submit ***interesting and creative videos*** that summarize your Ph.D. thesis work within 3 minutes.

- **How to narrate:**
  The length of videos MUST be 3 minutes or less. **Note: Any video longer than 3 minutes will be excluded from the review**. Here are some helpful suggestions:
  - Carefully budget the time. Allow approximately 120 seconds to present the main body. Allocate approximately 30 seconds to the introduction and conclusion sections each.
  - Use simple and easy-to-understand language. Avoid using long sentences and jargon.
  - Speak clearly. Maintain a good pace, avoiding speaking too fast or too slow. Pause at key points.

- **How to record a video:**
  - Use a quality camera and microphone.
  - Select a neutral background for the project.
  - Use visuals freely. Insert slides into the video if and when required. Keep the inserted slide simple. Text and complicated images can be distracting and will be hard to read on a mobile device. Do not entirely rely on slides to convey your message, rather use it to compliment your spoken oration.
  - A lightboard can be used to illustrate key concepts, for example, https://youtu.be/maAPlmhSxJk
  - A short video with the hardware setup, for example, https://youtu.be/BvSMW6GTWS4
  - A combination of slides and hardware setup, for example, https://youtu.be/b8580rTRXDQ

  - Some samples can be found at
    https://www.youtube.com/watch?v=D_1MK3Ub9QM
    https://www.youtube.com/watch?v=0K9iYUBCG_o
    https://www.ted.com/talks
    Advanced Control Functionalities for Photovoltaic and Energy Storage Converters

- **Video Editing software:**
  There is a variety of video editing software options including, but not limited to, the following:
  - **Video editing software**: Adobe Premiere Pro, Camtasia, iMovie
  - **Video engaging tools for animation**: There are various open source animation tools available. Some them are:
    Pencil (https://www.pencil2d.org/)
    Synfig Studios (https://www.synfig.org/)
    Stykz (http://www.stykz.net/)
    Blender (https://www.blender.org/)
    Daze (http://www.daz3d.com/technology)

9. Intellectual Property

Describe your thesis without disclosing confidential information.

Necessary permission from the sponsor should be obtained in case of the sponsored research project.

10. Nomination

All videos must be submitted to the OpenWater platform as a nomination. An IEEE Account (i.e., registered IEEE membership) is required for login. The online nomination forms are saved in your account automatically and can be resumed at any time.