

**IEEE TC-5: High Power Electromagnetics (HPEM)
Meeting at the 2018 IEEE EMC/APEMC International Symposium in Singapore
Wednesday, 16 May 2018 (12:30 – 13:30)**

Unconfirmed Minutes

1. Opening of the meeting — W. Radasky, Chairman

Chairman Dr. William (Bill) Radasky brought the meeting to order at 12:30. Dr. Radasky welcomed the attendees, reviewed the agenda and asked for suggested changes; none were offered. Dr. Radasky made a motion to approve the agenda. MSC.

7 persons attended the meeting, and it was likely that our attendance was reduced as the advertised lunch was held at a different location than the meeting. Their names have been added to the 5-year attendance list.

2. Minutes — W. Radasky, Chairman

Dr. Radasky reviewed the minutes of the 2017 meeting in National Harbor, Maryland, USA. There were no changes to the minutes, and a motion was made to approve the minutes. MSC.

3. Update TC-5 membership list — All

The Chairman requested that each member review and update the membership list, which was circulated in the meeting. TC-5 has a “five-year of inactivity rule.” You remain a member-in-standing for five years since the last time you participated. Participation is not limited solely to symposium meeting attendance. Participation includes activities such as reviewing papers, organizing and/or chairing symposium sessions, and chairing subcommittees.

The updated membership list is attached.

4. Technical papers — W. Radasky

Dr. Radasky reported on the TC-5 technical paper review process for the Singapore Symposium.

20 regular papers were submitted and 8 were rejected (some mandatory reviews were not resubmitted). The 12 accepted papers were 9 oral papers and 3 poster papers.

There was one special session on EM Information Leakage organized by Prof. Hayashi with 9 oral papers presented. Therefore the total count was 29 papers submitted and 21 papers accepted.

TC-5 sponsored 2 tutorials/workshops

- Protection of the Civil Infrastructures Against IEMI (Sabath/Leferink)
- Lightning Protection of Wind Turbines (Rubinstein/Rachidi)

TC-5 chaired three (5) sessions

- EM Information Leakage (TU-PM-I)
- EM Information Leakage Special Session, Part 1 (WED-PM-I)
- IEMI (WED-PM-II)
- EM Information Leakage Special Session, Part 2 (TH-AM-II)
- ESD and Arcs (TH-PM-I)

5. Report from the Lightning Subcommittee — M. Rubinstein

Professors Rubinstein and Rachidi reported on the activities of the Lightning subcommittee.

They reviewed 2018/2019 conferences and committee meetings held and planned. For the remainder of 2018 there are lightning activities planned at the IEEE EMC Symposium in Long Beach (July), AMEREM in Santa Barbara (August), EMC Europe in Amsterdam (August), ICLP in Rzeszow, Poland (September) and ICEAA in Cartagena de Indias, Columbia (September). In 2019 there are lightning activities planned at AMS, APEMC, APL, IEEE EMC, ASIAEM, ICOLSE, SIPDA XIV, and EMC Europe.

There was an in-depth review of 7 working groups in Cigré Study Committee C4 dealing with lightning including C4.23, C4.30, C4.33, C4.36, C4.37, C4.39 and C4.43. There is an IEEE PES working group entitled: “Lightning Performance of Overhead Lines”.

Their presentation ended with their plans for 2 lightning workshops for the IEEE EMC Symposium in Long Beach, which have both been accepted.

6. Report from the EM Information Leakage Subcommittee — Y. Hayashi

Professor Hayashi reported on some activities of the EM Leakage subcommittee. He began with a description of the special session (SS-09: Hardware Security for IoT Devices), which was to be presented on Wednesday afternoon directly after the TC-5 meeting. Nine papers are in this special session. In addition there was a regular session on EM Information Leakage presented on Tuesday afternoon with 6 papers.

As for future plans, Professor Hayashi intends to organize either workshops and/or special sessions at the EMC Sapporo & APEMC Symposium to be held in June 2019. His plans will also be discussed in Long Beach for IEEE EMC in New Orleans, which is in New Orleans in 2019.

7. Report from the IEMI Subcommittee — F. Sabath

No report was provided from this subcommittee.

8. Report from the ESD Subcommittee — Michael Khazhinsky

No report was provided from this subcommittee.

9. Coordination with SC-1, Smart Grid — All

The SC-1 committee on Smart Grid is chaired by Don Heirman, and Dr. Radasky is the vice chair. The purpose of the committee is to coordinate smart grid activities of other committees working on the smart grid.

Don Heirman was not able to attend the meeting on Wednesday morning, so Dr. Radasky chaired the meeting. No specific information arose of interest to TC-5.

10. Status of the TC-5 web page — M. McInerney

There is no new information on the system for updating the TC-5 web page.

11. Review of HPEM activities since the last TC-5 meeting — W. Radasky

The U.S. Congressional Committee on EMP restarted work in January 2017 and reviewed the work done in response to its recommendations for protecting the critical infrastructures in 2008. The work was completed in September 2017, although there are plans to continue to meet with the new U.S. Executive Department to try to encourage the critical infrastructures to begin a hardening program. Several new publications were produced and may be downloaded at <http://www.firstempcommission.org>

Independent of the EMP Commission and the Federal Government in the U.S., several power companies are in the process of hardening new and some old substation electronics from the effects of HEMP and IEMI. One power company will be discussing their work at AMEREM in Santa Barbara, California in August 2018.

In addition, a briefing was provided by Dr. Nicolas Mora, Chapter Chair from the IEEE CH EMC/AP/MTT Chapter describing a very successful High Power Electromagnetics Workshop held in Lausanne, Switzerland on 5 February 2018. There were 72 registered participants, with 65% from Switzerland, 21% from European countries, and 4% from US/CO. We were informed that this may become an annual event.

12. Discussion concerning whether a tutorial, workshop, and/or special sessions should be organized for next year in Long Beach — All

For the Long Beach symposium 2 tutorials dealing with different aspects of lightning electromagnetics and one special session dealing with ESD have been approved. There will be a TC-5 committee meeting at Long Beach Symposium at noon on Wednesday of the conference week.

13. HPEM standards for lightning direct effects on aircraft — F. Heather

There was no report on the status of this plan for a new standard. It is expected to be discussed in Long Beach.

14. Request for volunteers to become Secretary of TC-5

The attendees were informed that at this point we are without a Secretary for TC-5. After the meeting was concluded, Dr. Giuseppina Dall'Armi-Stoks volunteered. She is a senior research scientist at the Defence and Technology Organisation, in Edinburgh, Australia. It is planned at the meeting in Long Beach that her nomination will be presented, and there will be a vote to approve a new Secretary.

15. Any other business

No new business was raised.

16. Adjournment

The committee adjourned at 13:30.

The TC-5 Chairman, Dr. William Radasky, prepared these minutes.