

# 2023 Annual Report (June 2022 – May 2023) Electronics for Agrifood Special Interest Group IEEE Circuits and Systems Society

Chairman: Victor Grimblatt  
Chair-Elect: Danilo Demarchi  
Secretary: Francois Rivet

## 1. Special Interest Group Meeting(s):

The Electronics for Agrifood SIG was created in July 2021, several activities have been developed during the period.

We have had a meeting last ISCAS with a good participation, over 40 persons (hybrid meeting).

## 2. Voting Members:

| First Name | Last Name        | Affiliation                        | Email                          | IEEE Grade | IEEE Region |
|------------|------------------|------------------------------------|--------------------------------|------------|-------------|
| Danilo     | Demarchi         | Politecnico di Torino              | danilo.demarchi@polito.it      | Senior     | 8           |
| Marios     | Sophocleous      | University of Cyprus               | sophocleous.marios@ucy.ac.cy   | Member     | 8           |
| Matias     | Miguez           | UCU                                | mmiguez@ucu.edu.uy             | Member     | 9           |
| Francois   | Rivet            | Université de Bordeaux             | francois.rivet@ims-bordeaux.fr | Member     | 8           |
| Victor     | Grimblatt        | Synopsys                           | Victor.grimblatt@synopsys.com  | Senior     | 9           |
| Alper      | Bozkurt          | North Carolina State University    | aybozkur@ncsu.edu              | Senior     | 1-6         |
| Daniel     | Lai              | Victoria University                | Daniel.Lai@vu.edu.au           | Member     | 10          |
| Marco      | Carminati        | Politecnico di Milano              | marco1.carminati@polimi.it     | Senior     | 8           |
| Zhongyang  | Cheng            | Auburn University                  | chengzh@auburn.edu             | Member     | 1-6         |
| Mario      | Casu             | Politecnico di Torino              | mario.casu@polito.it           | Senior     | 8           |
| Mohammad   | Russel           | Dalian University of Technology    | mrussel@dlut.edu.cn            | Senior     | 10          |
| Alfredo    | Arnaud           | UCU                                | alfranaud@gmail.com            | member     | 9           |
| David      | Polese           | Consiglio Nazionale delle Ricerche | david.polese@cnr.it            | Not member | 8           |
| Paddy      | French           | Delft university of technology     | p.j.french@tudelft.nl          | Member     | 8           |
| Luisa      | Petti            | Free University of Bozen-Bolzano   | luisa.petti@unibz.it           | Member     | 8           |
| Alberto    | Sanchez          | Universidad San Francisco de Quito | asanchez@usfq.edu.ec           | Member     | 9           |
| Carlos     | Muñoz            | Universidad de la Frontera         | carlos.munoz@ufrontera.cl      | Member     | 9           |
| Hugo       | Burgos           | Universidad San Francisco de Quito | hburgos@usfq.edu.ec            | Member     | 9           |
| Paolo      | Motto Ros        | Politecnico di Torino              | paolo.mottoros@polito.it       | Member     | 8           |
| Alfonso    | Chacon Rodriguez | Tecnologico de Costa Rica          | alchacon@tec.ac.cr             | Member     | 9           |
| Umberto    | Garlando         | Politecnico di Torino              | umberto.garlando@polito.it     | Member     | 8           |

|                        |                    |  |                                 |        |     |
|------------------------|--------------------|--|---------------------------------|--------|-----|
| Pietro                 | Ibba               | Free University of Bolzano-Bozen       | pietro.ibba@natec.unibz.it      | Member | 8   |
| Arys                   | Indira Carasquilla | Tecnologico de Costa Rica              | acarrasquilla@tec.ac.cr         | Member | 9   |
| Renato                 | Rimolo Donario     | Tecnologico de Costa Rica              | rrimolo@tec.ac.cr               | Senior | 9   |
| Alessandr              | Sanginario         | Politecnico di Torino                  | alessandro.sanginario@polito.it | Member | 8   |
| Alvaro                 | Pardo              | UCU                                    | apardo@ucu.edu.uy               | Member | 9   |
| Jose Augusto           | Miranda Nacif      | Universidade Federal de Viçosa         | jnacif@ufv.br                   | Member | 9   |
|                        | Jalaja             | Bangalore Institute of Technology      | jalajas@ieee.org                | Member | 10  |
| Roberto                | La Rosa            | ST                                     | roberto.larosa@st.com           | TBD    | 9   |
| Oswaldo                | Menendez           | Universidad Andres Bello               | oswaldo.menendez@unab.cl        | TBD    | 9   |
| Daoud                  | Urdu               | Wageningen University & Research       | daoud.urdu@wur.nl               | TBD    | 8   |
| George                 | Beers              | Wageningen University & Research       | george.beers@wur.nl             | TBD    | 8   |
| Sjaak                  | Wolfert            | Wageningen University & Research       | sjaak.wolfert@wur.nl            | TBD    | 8   |
| Emilio                 | Sardini            | University of Brescia                  | emilio.sardini@unibs.it         | TBD    | 8   |
| Randall                | Geiger             | Iowa State University                  | rlgeiger@iastate.edu            | Senior | 1-6 |
| Jai                    | Narayan Tripathi   | Indian Institute of Technology Jodhpur | jai@iitj.ac.in                  | Senior | 10  |
| Fidel                  | Makatia            | Kenyatta University                    | fidelmakatia85@gmail.com        | Member | 8   |
| Shadrack               | Mambo              | Kenyatta University                    | mambo.shadrack@ku.ac.ke         | TBD    | 8   |
| Colleen                | Josephson          | University of California, Santa Cruz   | cjosephson@ucsc.edu             | Member | 1-6 |
| Roberto                | Persirvale         | GoMicro                                | rpersivale@gmail.com            | TBD    | 9   |
| Ricardo                | Mendoza Garcia     | Ancestral Technologies                 | franco@ancestralttech.com       | Member | 9   |
| Marylin                | Wolff              | University of Nebraska                 | mwolf@unl.edu                   | Senior | 1-6 |
| Davide                 | Brunelli           | University of Trento                   | davide.brunelli@unitn.it        | Member | 8   |
| Andrea                 | Boni               | University of Parma                    | andrea.boni@unipr.it            | Member | 8   |
| Daniele                | Trincherio         | Politecnico di Torino                  | daniele.trincherio@polito.it    | Member | 8   |
| Muhammad Sarmad Shahab | Mir                | IMDEA                                  | sarmad.mir@imdea.org            | Member | 8   |
| Tarek                  | Djerafi            | INRS                                   | tarek.djerafi@inrs.ca           | TBD    | 7   |
| Morgan                 | Madec              | Université de Strasbourg               | morgan.madec@unistra.fr         | TBD    | 8   |
| Luc                    | Hebrard            | Université de Strasbourg               | luc.hebrard@unistra.fr          | TBD    | 8   |
| Wilfried               | Uhring             | Université de Strasbourg               | wilfried.uhring@unistra.fr      | TBD    | 8   |
| Wei-Jen                | Lee                | The University of Texas at Arlington   | wlee@uta.edu                    | Fellow | 1-6 |
| Julio                  | Torres-Tello       | University of Saskatchewan             | jwt804@usask.ca                 | Senior | 7   |
| Stefano                | Olcese             | Plug and Play Tech Center              | solcese92@gmail.com             | TBD    | 8   |
| George                 | Archbold           | Universidad Javeriana                  | george.archbold@ugent.be        | Member | 9   |

|              |               |  |                                |        |     |
|--------------|---------------|--|--------------------------------|--------|-----|
| Temitope     | Odedeyi       | University College London                    | t.odedeyi@ucl.ac.uk            | TBD    | 8   |
| Stefano      | Gregori       | University of Guelph                         | sgregori@uoguelph.ca           | Member | 7   |
| Charalampous | Patsianotakis |  | cpatsianotakis@outlook.com.gr  | Member | 8   |
| Marcello     | Coppola       | ST   | marcello.coppola@st.com        | TBD    | 8   |
| Alex         | James         | Digital University Kerala                    | apj@ieee.org                   | Member | 10  |
| Sakthidasan  | Kalidasan     | University of Utah                           | sakthidasan.kalidasan@utah.edu | Senior | 1-6 |
| Mihai        | Sanduleanu    | Khalifa University of Science and Technology | mihai.sanduleanu@ku.ac.ae      | Senior | 8   |
| Maria        | Trocan        | ISEP   | maria.trocan@isep.fr           | Member | 8   |
| Franco       | Fassio        | University of Gastronomic Sciences           | f.fassio@unisg.it              | TBD    | 8   |

### Geographical distribution of TC/SIG members (percentage of total)

|                                       | 2023 |
|---------------------------------------|------|
| Total number of SIGs                  | %    |
| Regions 1 – 6 (U.S.A.)                | 11   |
| Region 7 (Canada)                     | 5    |
| Region 8 (Europe/Africa, Middle East) | 52   |
| Region 9 (Central/South America)      | 24   |
| Region 10 (Asia/Pacific)              | 8    |

### Gender distribution of TC/SIG members (percentage of total)

|                      | 2023 |
|----------------------|------|
| Total number of SIGs | %    |
| Male                 | 92   |
| Female               | 8    |

### Distribution of TC/SIG members by affiliation (percentage of total)

|                      | 2023 |
|----------------------|------|
| Total number of SIGs | %    |
| Academia             | 87   |
| Industry             | 13   |
| Government           | 0    |

## 3. Accomplished Technical Activities

### 3.1. IEEE Conference/Event organizations

(First priority, please highlight conference/events technically and financially co-sponsored by the CAS Society)

| Your Name       | Conference Sponsors | Conference/Event Title | Your Role                      |
|-----------------|---------------------|------------------------|--------------------------------|
| Luisa Petti     | CASS                | CAFE 2023              | Member of organizing committee |
| Paolo Motto Ros | CASS                | CAFE 2023              | Publication chair              |
| Paolo Motto Ros | CASS                | CAFE 2023              | TPC member                     |

|                  |            |   |                          |
|------------------|------------|---|--------------------------|
| Danilo Demarchi  | CASS       | CAS Seasonal School on AgriFood Electronics | General chair            |
| Danilo Demarchi  | CASS, EMBS | BioCAS 2022                                 | TPC co-chair             |
| Victor Grimblatt | CASS       | EMC2  | Co-general chair         |
| Victor Grimblatt | CASS       | CAFE  | Co-general chair         |
| Francois Rivet   | CASS       | CAFE  | TPC chair                |
| Marco Carminati  | CASS       | ICECS 2022                                  | Awards Co-Chair          |
| Marco Carminati  | CASS       | BIOCAS 2022                                 | Special Session Co-Chair |
| Marco Carminati  | CASS       | NEWCAS 2023                                 | Awards Co-Chair          |

Please don't report conference/events that are NOT sponsored by the CAS Society. Thank you!

### 3.2. IEEE Journal Editorships:

(Please highlight the journals that are (co-)sponsored by the CAS Society, cf., <https://ieeecas.org/publications>)

| Your Name        | Journal Sponsors        | Journal Title   | Your Role          |
|------------------|-------------------------|---|--------------------|
| Luisa Petti      | EDS/Sensor Council/CASS | Extension of the Proceedings of the IEEE IFETC 2022 Conference - IEEE JFLEX | Guest Editor       |
| Luisa Petti      | CASS, SC, IMS, CRFI     | TAFE  | Associate editor   |
| Paolo Motto Ros  | CASS, SC, IMS, CRFI     | TAFE  | Associate editor   |
| Zhongyang Cheng  | CASS, SC, IMS, CRFI     | TAFE  | Associate editor   |
| Danilo Demarchi  | CASS, SC, IMS, CRFID    | TAFE  | EIC                |
| Marco Carminati  | CASS                    | IEEE Transactions on Biomedical Circuits and Systems                        | Associate Editor   |
| Marco Carminati  | CASS                    | IEEE Transactions on Agrifood Electronics                                   | Associate Editor   |
| Victor Grimblatt | CASS, SC, IMS, CFRID    | TAFE  | Steering committee |

Please don't report journals that are NOT sponsored by the CAS Society. Thank you!

### 3.3. Awards, Honors, and Recognition

(Fellow, Distinguished Lecturer, Outstanding Service, Best Paper Awards, and so on by the CAS Society)

| Your Name       | Awards / Honors / Recognition | Period      |
|-----------------|-------------------------------|-------------|
| Danilo Demarchi | DL                            | 2022 - 2024 |
|                 |                               |             |

### 3.4. Keynote Speeches/Invited Talks:

| Your Name   | Invited by              | Event/Conference Title  | Talk Title  | Date          |
|-------------|-------------------------|---|---|---------------|
| Luisa Petti | Conference organization | 9th Forum on New Materials, CIMTEC 2022                         | Flexible and Printed Sensors and Biosensors: From Materials and Processes to Systems and Applications | June 2022     |
| Luisa Petti | Conference organization | Innovations in Large Area Electronics Conference (innoLAE) 2023 | Functional Materials and Devices for Emerging Bioelectronic Interfaces                                | February 2023 |
| Luisa Petti | Conference organization | MRS Spring Meeting  | Functional Materials and Devices for Emerging Bioelectronic Interfaces                                | April 2023    |

|                  |                         |  |  |                |
|------------------|-------------------------|--|--|----------------|
| Daniilo Demarchi | Conference organization | Keynote @LASCAS 2023   | Let the Plants do the Talking: Smart Agriculture by the Messages Received from Plants and Soil | February 2'034 |
| Daniilo Demarchi |                         | DL   | Let the Plants do the Talking: Smart Agriculture by the Messages Received from Plants and Soil | May 2023       |
| Daniilo Demarchi |                         | DL   | Let the Plants do the Talking: Smart Agriculture by the Messages Received from Plants and Soil | May 2023       |
| Marco Carminati  | CASS                    | 3 <sup>rd</sup> IEEE CAS Seasonal School on AgriFood Technologies (Torino) | Sensors and Low-Power Electronics for Monitoring Water Quality and Quantity                    | 2022           |
| Marco Carminati  | CASS                    | ISCAS 2023, Tutorial   | Charge and Current Sensing Analog Design: from Front-End to In-Sensor Machine Learning         | 2023           |

### 3.5. Other distinguished IEEE services

(For example, CAS BoG, Region/chapter leadership, TC chair/secretary)

| Your Name        | Organization | Position/Activities  | Period      |
|------------------|--------------|----------------------|-------------|
| Maria Trocan     | IEEE France  | Vice chair           | 2023        |
| Victor Grimblatt | CASS Chile   | Chair                | 2022 – 2024 |
| Victor Grimblatt | CASS         | BoG, Member at Large | 2021 - 2023 |

### 4. TC Significant Technical Leadership and Innovations

Please list 5 (or less) most significant TC/SIG activities in the past year, for example, but not limited to

- (1) Established/organized new CASS journals/conferences/workshops
  - a. Please include title, scope, status (e.g., submissions, published papers)
- (2) Organized special issues in CASS journal, special sessions/tutorials in CASS conferences, CASS seasonal schools, CASS industrial forums, or CASS competitions
  - a. Please include title, the guest editors/organizers, the year, and the month, the number of submissions, the number of papers published, and the impacts (e.g., the total number of citations/full text views so far or the total number of attendees)
- (3) Organized new CASS initiatives
- (4) Established cross-TCs/SIGs collaborations
- (5) Awards received by the TC/SIG or the TC/SIG members

1. WAFE (IEEE Workshop on Agrifood Electronics)
  - February 2023
  - Quito, Ecuador
  - 2 keynotes
  - 5 papers
  - Over 80 attendees
  - In-person workshop
2. Seasonal School (3rd IEEE CAS Seasonal School on AgriFood Technologies)
  - September 2022 – hybrid
  - 203 Subscribers (15 companies)
  - 18 in person (5 companies)
  - Average of 50 people connected
  - 20 lectures
3. IEEE Workshop on Electronics for Mitigating Climate Change (EMC2)
  - November 2022
  - Singapore
  - 25 in-person participants
  - 2 virtual talks part of Climate Change TAB

4. Danilo Demarchi nominated Distinguished Lecturer
5. 2 virtual talks as part of Climate Change TAB

## **6. New plans for the next year**

Are there any new initiatives, workshops, journal special issues, conference special sessions, etc., that your TC or TC members are planning for the next year?

1. IEEE Transactions on AgriFood Electronics (TAFE)
  - 1st issue,
  - 25 papers received, 5 accepted,
  - invitation of WAFE papers,
  - 2nd issue will publish 20 papers or more, encouraging publications of system dedicated to agriculture
2. IEEE Conference on AgriFood Electronics (CAFE)
  - September 2023
  - Torino, Italy
  - Target accepted 50 papers,
  - Bid for CAFE 2024 open with guidelines
3. Industry for AgriFood Electronics (IAFE)
  - Co-located with with CAFE,
  - 7 companies are willing to participate
4. 4<sup>th</sup> IEEE CAS Seasonal School on AgriFood Technologies (SSAFE)
  - Bid open for 2023 and onwards
  - Focus on local issues
  - Hybrid mode
5. IEEE Workshop on Agrifood Electronics (WAFE)
  - Attract people to the SIG
  - Located in emerging countries
  - 2 selected papers are invited for submission in CAFE (and then published in IEEEXplore)