



EuroEAP Society

European Society for Electromechanically Active Polymer
Transducers & Artificial Muscle

EuroEAP Society Challenge 2023 – Sponsored by Toyota

Introduction

To promote innovation, creativity, and collaboration in the field of soft transducers the EuroEAP Society is pleased to announce the sixth annual EuroEAP Society Challenge sponsored by Toyota. The challenge is an open competition in which teams of talented researchers can showcase a project and compete with colleagues from academia and industry. The aim of the Challenge is to captivate and inspire the imagination of experts and the public alike with the possibilities that soft smart materials and soft transducers empower. The announcement of the winning team will take place at the EuroEAP 2023 Conference, where the projects will be exhibited.

The challenge

Past challenges were focused on Electromechanically Active Polymers. From this year, the challenge expands its scope to soft smart materials and soft transducers.

Each team should build and test new material/device/system, presenting a demo that performs a given task or function of their choice.

As the Challenge has no predefined goals, participants have the opportunity to showcase their pet projects, which may be fun or interesting, not necessarily of profound scientific importance. There are no restrictions on the type of technology to be utilised or the required functionality/application to be obtained.

Toyota Innovation Award

To promote the transition of soft transducer related technology from the research labs to the mobility or robotics field, the EuroEAP Society is pleased to announce the Toyota Innovation Award. The award is sponsored by Toyota Motor Engineering & Manufacturing North America (TEMA). It will be awarded in addition to the EuroEAP Society Challenge prizes to a project deemed to be relevant for use as soft transducers in the mobility or robotics field. The entry must be a new idea taking advantage of the characteristics of soft transducers to address the shortcomings of existing products in the mobility or robotics context.



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Awards

The announcement of the winning teams will take place at the EuroEAP 2023 Conference.

The prizes are:

Toyota Innovation Award

- Winner: Euro **2000**

EuroEAP Society Challenge

- 1st prize: Euro **1000**
- 2nd prize: Euro **700**
- 3rd prize: Euro **300**

Winners and their demos will also be featured on the EuroEAP website (<http://www.euroeap.eu/index.php/past-edition-winners>) and social media.

The Toyota Innovation Award will be awarded only to projects deemed to be relevant to soft transducers in the mobility or robotics field, according to the judging criteria reported below. The winner of the Toyota Innovation Award is automatically excluded from the EuroEAP Society Challenge

We reserve the right to decrease the number of awarded prizes for the EuroEAP Society Challenge depending on the number of participating teams according to the table below:

Participants	Prizes
1-2	No Challenge
3	1 st prize
4	1 st and 2 nd prizes
5 or more	All 3 prizes



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Procedure

Enrolment

The Challenge is open to individuals or teams from anywhere in the world.

The only condition for participation is that at least the team leader is a member of the EuroEAP Society at the time of the enrolment in the Challenge.

To enrol, the team leader should fill the following google form:

<https://forms.gle/F59eQgAV1wRaRCeQ7>

The form includes the following items:

- 1) Project title.
- 2) List of team members and their affiliations.
- 3) A description of the project (maximum 1500 characters).
- 4) Statement that the team leader has a confirmed subscription to the EuroEAP Society for the current calendar year (note: if the subscription is pending, the enrolment will not be accepted until the subscription is confirmed).
- 5) A commitment to exhibit the demo at the EuroEAP 2023 conference, as a part of the EuroEAP Challenge exhibit.

The deadline for enrolment is 23.04.23

A notification of acceptance will be sent by email within 10 days.

Final submission

The team leader should fill the following google form:

<https://forms.gle/hU56VdK9UniqUxeaA>

The form includes the following items:

- 1) A description of the final demo (maximum 3 pages).
- 2) A link to download a video file of the demo.
The video, with a maximum duration of 3 minutes, should showcase the project in a creative way.
The video will be shown during the EuroEAP Conference and posted on the YouTube channel of the EuroEAP Society

The deadline for the final submission is 23.05.23

Accessing the form requires a Google account, which can be created for free. Should this be an issue, please contact outreach@euroeap.eu for an alternate way to submit your entry.



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Evaluation

Jury

The Jury will consist of two groups:

- A panel of experts composed by not more than two members from Toyota and three or more members from academia.
- The EuroEAP conference attendees.

Criteria for judging the demos

As the topic is open, no direct comparison among demos can be made. Instead, each demo will be evaluated based on the 7 criteria: 6 for the EuroEAP Society Challenge and one for the Toyota Innovation Award. The criteria, using a 0-10 points scoring, are presented below.

1. How novel is the idea?

Has the device (or a very similar idea) been presented in a previous EuroEAP Society Challenge? The novelty of the idea or device will be checked against previously presented ideas. Here is the link to the previous ideas in the past EuroEAP conferences.

<http://www.euroeap.eu/index.php/past-edition-winners>

2. How innovative is the device?

Does the device use materials in a novel way? Is the purpose/function an imaginative implementation of soft smart materials and soft transducers technology?

(“Can be purchased on Amazon” = 0 to “Never even contemplated such a contraption” = 10)

3. How ingenious is the approach/method?

(“This method can be found in a pre-school textbook” = 0 to “Is there a method to this madness?” = 10)

4. How well does the device perform?

(“Astonishingly poorly, this should have worked” = 0 to “Astonishingly well, I’m amazed it works at all” = 10)

5. Clarity and quality of the submission?

How is the overall clarity/quality of the submitted summary and video? Does it help to capture the imagination of the general public and the interest of scientists in other disciplines?

(“I cannot understand what the device was built for, I have no idea what has been done” = 0 to “A Eureka moment: the secret of the Universe have been revealed” = 10)

6. Aesthetics

(“Some things just can't be unseen” = 0 to “This should be a permanent exhibition in the Louvre” = 10)

7. Toyota Innovation Award eligibility

(“This has nothing to do with the mobility or robotics field” = 0 to “This is a ground-breaking idea for mobility or robotics” = 10)



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Evaluation method

The panel of experts will evaluate and grade each demo before the EuroEAP conference according to the criteria reported above.

For the EuroEAP Society Challenge, the demos will be ranked based on the total number of scores obtained on the first six criteria.

The panel of experts will allocate half of the possible points.

After the demonstrations/presentations by each participating team, all participants of the EuroEAP conference will be given the opportunity to express their own ranking, thereby allocating the second half of the available points for the EuroEAP Society Challenge.

In case of a tie, the panel of experts will be asked to elect a winner.

The Toyota Innovation Award will be awarded to the project with the highest score on criterion seven. The minimum score on criterion seven needed for the prize to be awarded is 9.

In case of a tie on criterion seven, the prize will be awarded to the project with the highest score obtained on the other six criteria. In case of a tie, the members of the panel from Toyota will be asked to elect a winner.

Contact details for enquiries

For further questions please contact outreach@euroeap.eu.

Sponsors

Toyota Motor Engineering & Manufacturing North America (TEMA)