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solaris
Förderzentrum für Jugend
& Umwelt gGmbH Sachsen



S  **lar?**
Yes, of course!



**Competition
solarisCUP**

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Sustainability - The better option!





Solar car competition for youngsters

- The „solarisCUP “ is a competition of self made vehicles and boats purely powered by solar power.
- It promotes young scientists and technologists and their creativity. Priority is team work and competition. Winners use sun energy most efficiently.
- “Save the environment” aspect, expressed by posters, is important to introduce themes as environment, energy efficiency or mobility.
- Competition is suitable for private work groups and even school lessons

Raise interests in technically oriented education.



The History of “solarisCUP Sachsen”

In year 200, at the turn of the millennium, the concept of a solar car competition in Chemnitz was drafted and launched.

Students, hobbyists, tinkerers and technically interested young people are addressed by the competition.



The solar cars, designed, developed and tinkered by participants themselves, are simple models, aimed to convert available sunlight directly into electricity and the propulsion of the cars.



Solar car competition 2000 - 2008

- Young people of all school types and ages have developed and built solar powered vehicles.
- The need of sustainability was recognized on early stage.
- All next competitions were designed and planned on that basis.

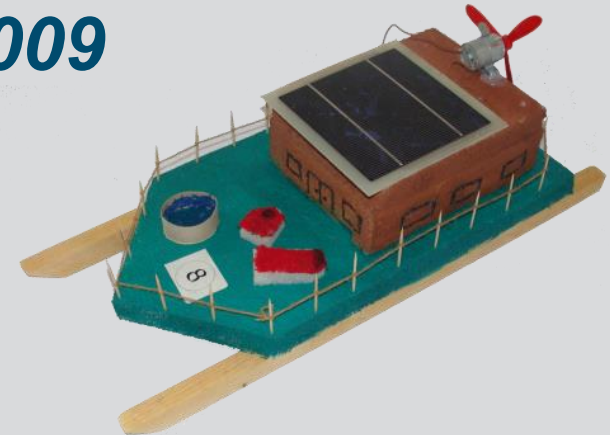


Participants had the opportunity to develop their own technical and creative limits.

It was determined to build simple solar-powered model vehicles that bridge a distance of 20 meters.

“solarisCUP” 2009

- Starting in year 2009 German schools were able to include solar car development into a special subject.
- Pupils of several school types and ages were touched now by the themes of the solar car competition. Their interests in own activities in the competition raised soon.



Solar boat categories

- Air propeller drive
- Water propeller drive

Solar car categories

- Traditional
- Creative
- Direction reverse





Solar boat categories

- Children up to 3 team members develop own solar-powered boats following a few construction rules for two different categories.
- Pupils of primary or secondary schools up to grade 6 build a solar-powered model boat equipped by an identical kit of basic components.
- After choosing the category (air or water propeller) the boats hull and all details are designed by the teams themselves.
- Up to four boats will compete in a race in water basin. They will cross a distance of about 5 meters two times. Fastest boats win the race.

All conditions and the technical regulations are defined in a description of the competition.



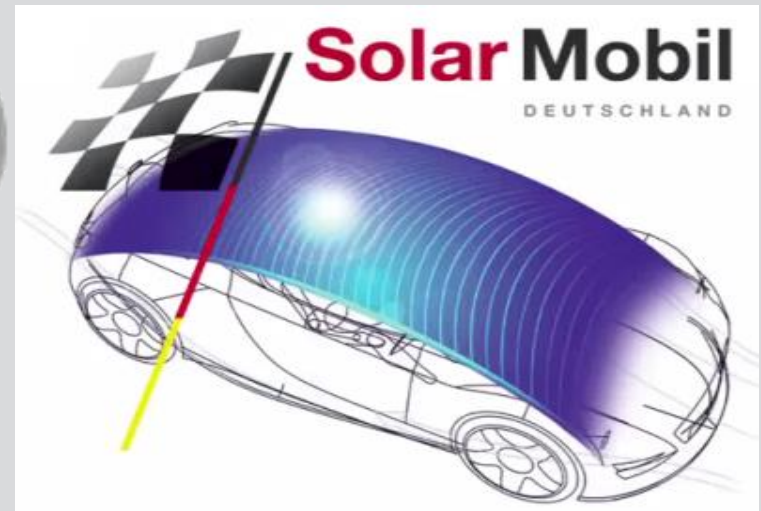
Solar car categories

- Teams of up to 3 members develop own solar-powered car models following a few construction rules. Youngest participants can be grade 5.
- Pupils build own car models equipped by identical kit of basic components. After choosing a category (traditional, creative or direction reverse) cars hull and all technical details are designed by the team.
- In “traditional” category participants raise their technical limits. Simple solar-powered car models are build and have to cross a distance of 10 meters two times. The winner is determined in different rounds/races.
- Creative vehicles can win category "creative".
- Older students use the option “direction reverse”. Procedure is as traditional. The vehicle switch direction automatically by wall touching.



SolarMobil Deutschland

- The dream of renewable energy mobility and new mobility concepts inspired people to create the German wide competition “SolarMobil Deutschland.”
- In 2010 the first federal competition was launched. Students from all over Germany, qualified by 14 regional competitions, took part in Berlin.
- The federal German competition was hosted in Chemnitz 2012 and will take part again in September 2018.





Call for international guests

Discussion of general conditions (I):

- All international teams have to be announced with (hopefully creative or funny) names on **15th August 2018**
- All conditions are soon provided by Solaris based on conditions of “direction reverse” and “creative” class, poster definitions and discussion.
- International teams are separately evaluated while integrated in the German competition. Solar models not complying with the regulations are not allowed to start.
- All energy must be generated directly by sunlight by using the a also provided kit (regular prize about 25 €). Short term storage by capacity should be used. Free choice of additional materials and general design.



Call for international guests

Discussion of general conditions (II):

- A poster (A2) has to be sent in advance based on a common provided design (Theme: Situation of electro mobility in each nation/region).
- Prizes could be awarded for the first three places and the best poster.
- For regularly competition we take a deposit of 15 € for each kit. The kits can be returned after the race and the deposit will be refunded. For CoCo+ guests the kit is available for free.
- Compulsory information about the competition and the regulations will be provided for all participating teams on race day before start.
- Any other questions???



Technical rules **SOLAR BOAT**

AIR PROPELLER

Technical data (kit)

- 1 solar module (ca. 0,5 V/4,6 A)
- 1 engine (e.g. RF 270) incl. a holder
- 1 air propeller

Allowed dimensions

- length: 40 cm up to 50 cm
- width: 15 cm up to 30 cm
- height: up to 30 cm

WATER PROPELLER

Technical data (kit)

- 1 solar module (ca. 0,5 V/4,6 A)
- 1 engine (e.g. RF 270) incl. a holder
- 1 water propeller
- 1 stern tube

Allowed dimensions

- length: 40 cm up to 50 cm
- width: 15 cm up to 30 cm
- height: up to 30 cm



Additional rules SOLAR BOAT

Vehicle construction and poster:

- Boats and posters are evaluated by an jury of experts.
- Originality, creativity and innovative technical design are valued.
- All boats are evaluated on the competition day.
- Poster design is included in the creativity assessment.
- Presentation of vehicle and poster:
 - How will students explain their own project?
 - How much knowledge have they gathered?
 - How is information processed?
 - Can the students talk about their vehicle and their poster?



Rules SOLAR CAR (Traditional)

Technical data (kit)

- 2 solar modules (ca. 0,5 V/4,6 A)
- 1 transmission kit including
- 1 engine and holder

Allowed dimensions

- length: up to 40 cm
- width: up to 30 cm

Vehicle construction and poster:

- Youngest participants may grade 5
- Use all kit components, free choice of gearbox. No previous modules.
- Energy storage devices or batteries are forbidden.
- Free choice of additional materials as well as car and poster design.
- Preparation and qualification rules according to available time
- 5x5 cm smooth areas on both sides for team numbers
- Poster A2 based on given topics of ecology and mobility. Space for the team number may also be defined.



Rules SOLAR CAR (Creative)

Technical data (kit)

- 2 solar modules (ca. 0,5 V/4,6 A)
(or own module up to 512 cm²)
- 1 transmission kit including
- 1 engine and holder

Allowed dimensions

- length x with x high up to
40 x 40 x 40 cm

Rules SOLAR CAR (Direction reverse)

Technical data (kit)

- 2 solar modules (ca. 0,5 V/4,6 A)
- 1 transmission kit including
- 1 engine and holder
- Gold-/Green-Cap 5,5 V
capacity 0,1 F

Allowed dimensions

- Ground clearance:
 - guide pin 5 mm
 - car min. 20 mm
- length x width x height: up to
40 x 20 x 30 cm



Rules SOLAR CAR (Direction reverse)

Conditions:

- straight lane of about 10 m with a guide rail (11 mm high/wide), end stops
- tracking by centrally placed guide pin(s) or by guide wheel(s)
- tunnel of about 1 m
- two direction turns (about 30 m in summary)

Car construction and poster:

- Evaluation is based on category, description and idea
 - Environment-friendly innovative construction, efficiency, renewable resources
 - Quality, design, professionalism, installation (cells, cables and chassis)
 - Creativity: design, clarity, ideas
 - Overall impression and comprehensibility of the poster
 - Project explanation, quality of presentation and poster, knowledge



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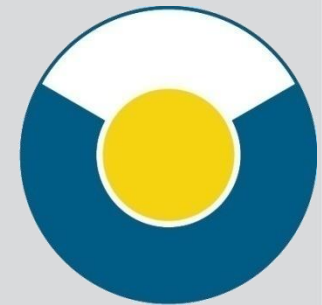
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Thank you for your attention!
Any additional questions?



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