



Global challenges in Physics and Society: New initiatives of the EPS

Luc Bergé, European Physical Society

PASSION FOR SCIENCE : Facing global challenges
20 June 2022 - Villa Monastero - Varenna - Italy

European Physical Society



Founded in 1968

Headquarters in
Mulhouse, France

Office in Brussels,
Belgium

42 Member Societies

18 Divisions & Groups

40 Associated Members

30 Cooperating Societies

3'500 Individual Members

130'000 physicists

European Physical Society

Facilitating physics research

12 Disciplinary
divisions

*Quantum Electronics and
Optics, Physics Education,
Plasma Physics, High
Energy Particle Physics,
...*

Conferences, grants

Prizes and Awards

6 Interdisciplinary
thematic groups

*Energy, Technology and
Innovation, Physics for
Development, ...*

Refereed journals

EPL, EPJ

European Physics



Shaping the European Physics Community

Forum Physics and Society
(*GC Horizon 2050*)

Input in FP9/HE
(*Cooperation with ISE*)

Physics and the Economy
(*Report by CEBR for EPS*)

European Integration
(*Central-East Europe*)

EPS Education Division
(*Validation of online courses*)

Lobbying for more
research funding

Equal Opportunities
(*END, Gender Fairness, CoC*)

EPS Historic Sites

Management (*Working Groups*)

Accompanying the next
Generation
(*Young Minds, IAPS etc.*)

European Physical Society

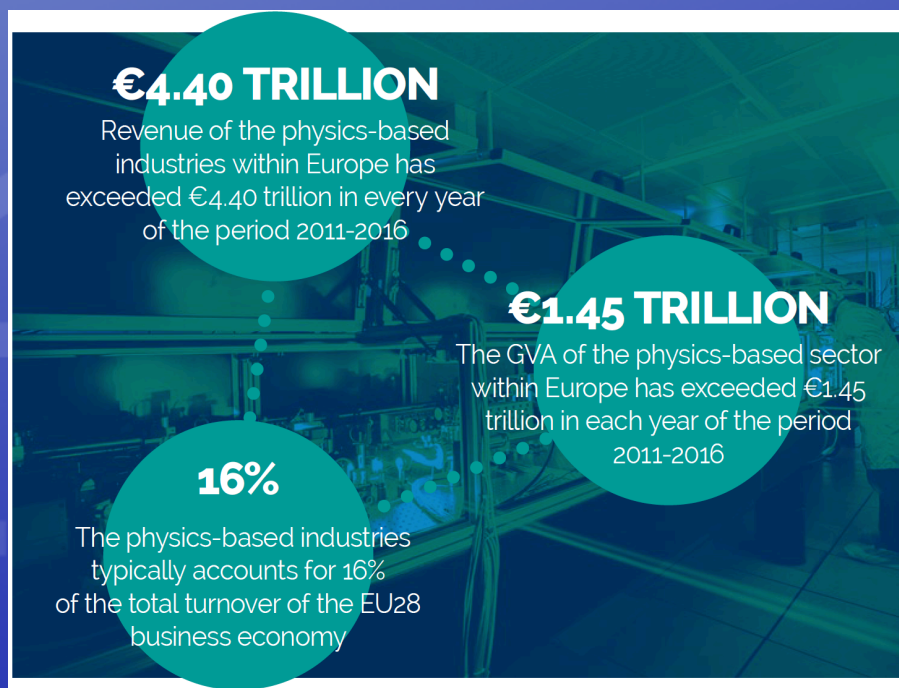
2. Challenges for basic (and applied) science to sustain development in relation with the activities at EPS



Contributing to the public debate

European Physical Society

The Importance of Physics to the Economies of Europe 2011 - 2016



Next edition in progress
2017 - 2023

Energy & Environment



[ABOUT US](#) [MEMBERSHIP](#) [DISTINCTIONS](#) [EVENTS](#) [SUPPORT](#) [EDUCATION](#) [PUBLICATIONS](#)



POLICY

Energy and the Environment

'European Energy Policy'

The Position Paper prepared by the Energy Group of EPS focuses on electricity production by non-fossil sources. It discusses the leading role of Europe in the broader context of the world energy problem and provides various policy recommendations.

Related content

[Download the position paper 'European Energy Policy'](#)

'Energy and the Environment'

Energy and the environment are intimately linked. Concern about the environmental impact of energy production has taken many forms. This study looks at how physics is used to understand the impact of energy production on the climate.

[Download the position paper 'Energy and the Environment: the intimate link'](#)

'Energy for the Future'

The use of nuclear power for electricity generation is the subject of worldwide debate. This position paper aims at a balanced presentation of the pros and cons of nuclear power and at informing both decision makers and the general public by communicating verifiable facts.

[Download the position paper 'Energy for the Future: the nuclear option'](#)

Reports from the EPS Energy Group

The EPS Energy Group brings together physicists interested in research and developments in physics related to energy. It prepares reports and studies.

[Visit the Energy group website](#)

2016 – Position Paper (PP)

2009 – PP: The intimate link

2007 – PP: The nuclear option

European Physical Society

ENERGY FOR THE FUTURE

The Nuclear Option

A position paper of the EPS

2007

Nuclear power can and should make an important contribution to a portfolio of sources having low CO₂ emissions.

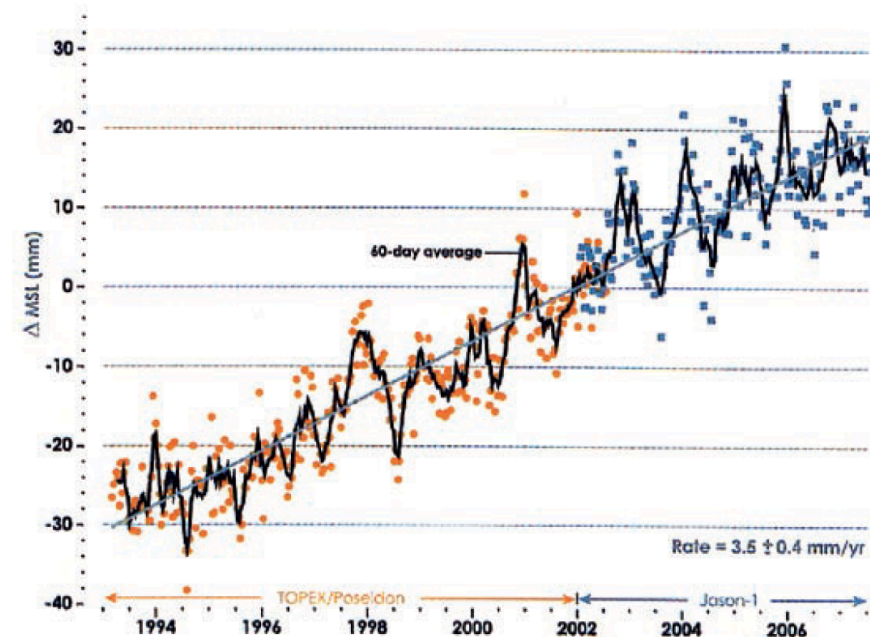
2009

ENERGY AND ENVIRONMENT

The Intimate Link

A position paper of the EPS
Environmental Physics Division

▼ FIG. 2: Global mean sea level derived from the French-American TOPEX/Poseidon and Jason-1 satellites show an average sea level rise of 3.5 cm per decade over the past 13 years. Source: Univ Colorado, LEGOS/CNES.



European Energy Policy and Global Reduction of CO₂ emissions: Towards an effective sustainable electricity production in Europe

The Position of the Energy Group of the EPS

2016

- (i) Europe alone cannot curb the increase in global CO₂ emissions. Global action is required.
- (ii) An efficient expansion of renewable energy sources requires solutions for intermittency and storage.
- (iii) The EU energy policy ought to be framed to strengthen Europe's economic position in the world.
- (iv) Europe can lead the global effort in CO₂ reductions by proposing and demonstrating an attractive and economically viable model.

Recommendations: Reduce worldwide CO₂ emissions + Consider all non-fossil electricity options + Educational actions on energy use

We also keep an eye on the future

European Phys

A visit to the ITER construction site by a joint EPS and SPS delegation

Antoine Pochelon, Christophe Rossel

The visit to ITER by part of the SPS board follows the distribution of the first issue of the **SPS Focus** [1] on *Nuclear Energy Generation, Progress in Fission, Breeding and Fusion Technology*, which prompted ITER Directeur General Bernard Bigot to invite the SPS for a visit to ITER. The chapter on fusion, "ITER – An Essential Step Towards Fusion Energy" provides an insight into the ITER project and objectives. However, nothing replaces a real visit on the construction site to get a sense of the scale of the undertaking.

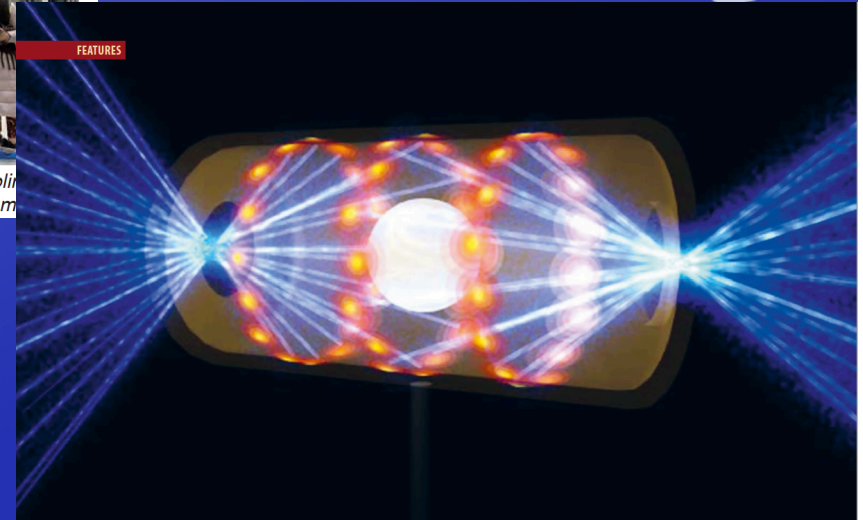
Independently, the EPS Technology and Innovation group (TIG) organized a visit to ITER on the 23 November 2021. The smart idea was to merge the two societies for the visit, which started with a nice joint meal in a good restaurant in Aix-en-Provence, at the invitation of the EPS. Eighteen physicists in total signed up for the visit in Saint Paul-lez-Durance, a place near Cadarache in south of France.



Our group in front of a sector mounted on the assembling line. One can see a D-shaped TF coil surrounding the vacuum chamber.

Visit ITER
TIG + SSP
23 Nov. 2021

Feature Article on FCI at NIF
EPN issue 53/1 - 2022



BREAKTHROUGH AT THE NATIONAL IGNITION FACILITY

■ S. Atzeni¹, D. Batani², C. N. Danson^{3,4}, L. A. Gizzi⁵, S. Le Pape⁶, J.-L. Miquel⁷, M. Perlado⁸,
R.H.H. Scott⁹, M. Tatarakis^{10,11}, V. Tikhonchuk^{2,12}, and L. Volpe^{13,14} – DOI: <https://doi.org/10.1051/epn/2022106>

3. Physics and Society

Euro



European Physical Society
more than ideas

ABOUT US

MEMBERSHIP

DISTINCTIONS

EVENTS

SUPPORT

EDUCATION

PUBLICATIONS

Physics and society

The EPS Forum Physics and Society (FPS) holds regular meetings discussing various issues of physics and society. The meetings make recommendation to the EPS and policy makers for actions.

Reports and Recommendations from the EPS Forum Physics and Society

2016 London, UK: [Getting the Diversity Balance Right in Physics](#)
2014 Belgrade, Serbia: [Improving the image of physics](#)
2012 CERN, Switzerland: [Physicists in the market place](#)
2010 El Escorial, Spain: [Science Journalism and Communication](#)
2009 Ratnieki, Latvia: [Physics Teaching, a New Deal](#)
2007 Zakopane, Poland: [Physics Education](#)
2006 Graz, Austria: [Physics & Society, Grand Challenge](#)

More info

[Website of the Forum Physics and Society](#)

Physics for Society: Grand Challenges in the Horizon 2050

European Physical

Challenges in physics (and
interconnections) to shape the future in
the coming 30 years

Theme 1: Physics as global human
enterprise to understanding nature

Theme 2: Physics Developments to tackle
major issues affecting the lives of citizens



- Meeting at Magnus Haus, Berlin
28-29 Oct. 2021 co-organised with DPG
- IOPP Book: 12 Editors from D/Gs -
Authors from 19 different countries



Physics for Society: Grand Challenges in the Horizon 2050

European Physical

Invited Speakers

Barthelemy Marc, IPHT, Saclay, France

[“Challenges for a science of cities”](#)

Blekman Freya, DESY, Hamburg, Germany

Chapman Henry, DESY, Germany

Darbellay Frédéric, Geneva University, Geneva, Switzerland

Dawid Richard, Stockholm University, Stockholm, Sweden

[Final but Incomplete – how 21st century fundamental physics might differ from the physics we know](#)

Draxl Claudia, Humboldt-Universität, Berlin, Germany

[From FAIR Data to Knowledge and Novel Materials](#)

de Rujula Alvaro, CERN, Geneva, Switzerland

[The Higgs boson and the Coronavirus](#)

Faus-Golfe Angeles, Université Paris-Saclay, France

[Accelerators for Health: From Current to Dream machines](#)

Goldstein Raymond E., University of Cambridge, United Kingdom

Günter Sibylle, Max Planck Institute for Plasma Physics, Germany

Hidalgo Carlos, EPS Chair Forum Physics and Society, Spain

[Physics for Society: Grand Challenges in the Horizon 2050](#)

Jürgen Kurths, Humboldt-Universität, Berlin, Germany

Organized by:

The German Physical Society (DPG)
[on the occasion of the DPG 175 years Anniversary]
and the European Physical Society (EPS)



4. EPS 2021 – 2024: New challenges

1/ Develop our cooperation with the industrial sector and technical universities

WG1: Link to Industry



2/ Set up a sustainable showcase for the EPS involving all EPS bodies

WG2: Forum Committees



3/ Help researchers from developing countries and reinforce links with Eastern states

WG3: Phys4Dev & Eastern States - **Be fully engaged in IYBSSD!**

WG 1: Reaching Industry

E. Nappi, P. Garcia Tello, C. Rossel, T. Severiens, Ophélie, Ahmed, LB

- **AM Survey:** <https://ec.europa.eu/eusurvey/runner/EPS-AM>

Response rate: about 30% - New initiatives requested
+ networking

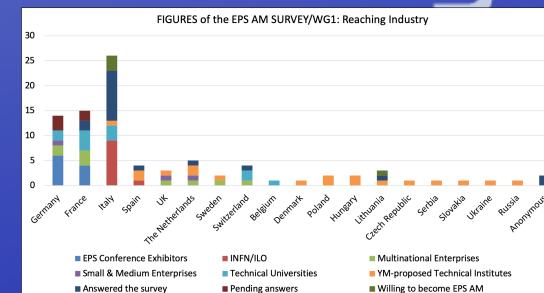
- **New AMs**

- Politecnico di Milano (1st Societal Sponsor)
- CECOM (1st Prestige Sponsor)
- OCEM PE (Supporter AM)
- IFIMAC - UAM Madrid (Supporter AM)

- **New Business web platform:**

<https://epsconnect.org>

(in progress)



+ 10% AM



WG 2: The EPS Forum (June 2-3)



Participants = 487, Students = 184, Countries = 30
Conferences, round tables, hands-on & poster sessions

WG 3: Phys4Dev & Eastern States

*T. Pena, I. Bearden, K. van der Beek, J. Niemela, G. Zwicknagl,
E. Rabinovici, R. Constantinescu, G. Djordjevic, L. Sirko, LB*

- **APS-ICTP-EPS Travel Grants**

EPS, ICTP and APS will each provide \$5K annually for 3 travel awards.

1st Campaign: 10 applications received

3 Laureates (Cuba, Pakistan, Iran) will go to UK or to France

The screenshot shows the official website for the APS-ICTP-EPS Travel Award Fellowship Programme. The header includes the logos of ICTP (The Abdus Salam International Centre for Theoretical Physics), IAEA, and a world map. Navigation links for Research, Scientific Calendar, and Programmes are present. The main content area is titled 'APS-ICTP-EPS Travel Award Fellowship Programme' and describes the joint initiative between the American Physical Society (APS), the European Physical Society (EPS), and the ICTP to support early career scientists from developing countries. It details the program's goals, eligibility, and application process, including a list of required documents: a complete CV and publication list, at least one letter of reference, and a letter of agreement and endorsement by the host laboratory. A 'DONATE' button is visible in the top right corner of the webpage.

Home > Programmes > Career Development > APS-ICTP-EPS Travel Award Fellowship Programme

CAREER DEVELOPMENT

APS-ICTP-EPS Travel Award Fellowship Programme

DONATE

Learn how to unify the world through science
Support ICTP

APS-ICTP-EPS Travel Award Fellowship Programme

The American Physical Society (APS), the European Physical Society (EPS) and the ICTP have agreed to explore the establishment of a joint Travel Award Fellowship Programme for active early career scientists from developing countries by supporting short-term research visits to laboratories in all of Europe and North America. This programme will enable selected recipients to return to the laboratories of their alma mater to use laboratory facilities they are familiar with, strengthen opportunities to conduct world-class research and enhance their list of publications.

The candidates will need to send their application files to itlabs@ictp.it with the subject line "ATAPFellowships" before the 28th of February of the fellowship year. Their application file should contain:

- A complete CV and publication list
- At least one letter of reference
- A letter of agreement and endorsement by the host laboratory

WG 3: Phys4Dev & Eastern States

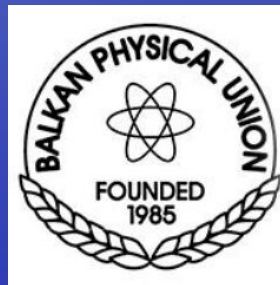
- **Participation to the IYBSSD Steering Committee
+ World Conf. on BSSD in Belgrade (20 – 22 Sept. 2022)**



THE EUROPEAN
PHYSICAL SOCIETY
IS A PARTNER
OF IYBSSD 2022



- **Participation to the 2022 BPU Congress (28 Aug. – 1 Sept. 2022)**



- **Actions for AFRICA**

EPS supports the 4th CF-PLP conf. – 11-16 Sept. 2022 (Cape Verde)
Actions for MCDA – EPS YM Morocco + Support to LIP2022 Conf.

physical Society

WG 3: Phys4Dev & Eastern States

European Physical Society

Water for Sustainable Development

A 3-day Fair Science
Research, Know-How Transfer and
Local Involvement

FEBRUARY 21-23, 2020

WSD2020.ORG



FACULTÉ DES SCIENCES ET TECHNIQUES
USMS, MGHILA, BENI MELLAL, MOROCCO



Towards the EPS 2.0

1/ Recruit AM from the industrial sector. **Basic science needs to partner with industry to sustain development.**

➡ Change of paradigm wrt the EPS Strategy Plan 2010+

2/ Offer travel grants and supports to researchers from developing countries. This also applies to European integration.

3/ We must increase the visibility of the EPS as an umbrella organisation for all the European physical societies

➡ The FORUM

4/ Revisions of the EPS Constitution and by-laws
Workgroup in progress

Thank you for your attention

