



## Call for papers ESCAPE-27

### 27th European Symposium on Computer-Aided Process Engineering (in conjunction with WCCE10)

Barcelona, Spain, 1-5 October 2017

**ESCAPE-27 offers an opportunity to discuss the latest advances in methods and tools for Computer-Aided Process Systems Engineering. This symposium will focus on the global challenges of the 21st century, ie sustainability, energy efficiency, water management, and health and food. In this, it will build on the previous symposium in the series, which was held in Portorož, Slovenia in June 2016.**

ESCAPE-27 is one of several specialized conferences forming part of the 10th World Congress of Chemical Engineering (WCCE10), which also includes the tri-annual Exhibition of the Chemical Industry (EXPOQUIMA) and will be held at Fira de Barcelona.

Registrants to ESCAPE-27 will have access to the full events and exhibitions of WCCE10, and manage their registrations, submissions and social programme through the World Congress registration portal. Having an integrated event will allow contributions to ESCAPE-27 to reach a broader global audience than ever before.

The organizing committee is gearing up for an exciting and informative conference programme including plenary and keynote sessions, oral and poster presentations, young researcher events and an exciting social programme for participants from all around the world.

#### Topics:

- **Modeling and simulation:** new models, new applications; metamodeling, multi-scale modeling; environmental/social/risk models
- **Synthesis and design:** process/supply chain synthesis and design; Advanced materials product design; process intensification; micro and nano applications
- **Planning and scheduling:** process/supply chain planning; EWO; process/supply chain planning scheduling
- **Process monitoring and control:** process monitoring, process control; fault detection and diagnosis



**ESCAPE-27** Barcelona  
October 1<sup>st</sup> - 5<sup>th</sup> 2017  
European Symposium on Computer-Aided  
Process Engineering



- **Integrated and holistic approaches:** integrated process and product synthesis/design; multi-scale/non-hierarchical decision-making; industrial symbiosis; competitive / multiparticipant decision support
- **Concepts, methods and tools:** advances in numerical methods; multiobjective optimization; uncertainty and risk management; Big Data management, methods and tools; the industrial Internet of Things; data-information-knowledge paradigm
- **CAPE applications addressing Global Grand Challenges:** energy systems; carbon mitigation; water management; food SC (including nitrogen cycle); health, medicine and pharma engineering; urban processes and systems; bio-engineering applications)
- **CAPE/PSE education and training.**

**The call for papers is open for your contribution! Deadline for abstract submission: 30 October 2016**

**Website: <http://www.wcce10.org>**

Welcome to the second 2016 issue of the EFCE newsletter. If you have any comments on the newsletter please get in touch.

*Rafiqul Gani*  
EFCE President

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# Who's Who

## New Executive Board members

At its recent meetings the Executive Board decided to co-opt Mr. I. Bülent Atamer, Terralab Inc., Ankara, Turkey, and Prof. Emilia Kondili, Piraeus University of Applied Sciences, Egaleo, Greece, until the end of the election period. In August 2016, Mrs. Claudia Flavell-While, IChemE, Rugby, United Kingdom, succeeded Dr. David Brown in the position of EFCE charity trustee.

## Change of Chairmanship

On 8 June 2016, **Prof. Bruno Fabiano**, Genoa, Italy, took office as the new Chair of the EFCE Working Party on Loss Prevention and Safety Promotion (LPWP) for three years. He succeeded Ir. Eddy De Rademaeker, who held the position for six years.

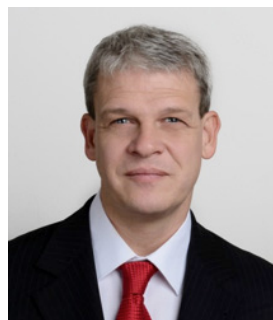
He was elected chairman of the Working Party on 27 October 2015 at the 91st business meeting in Odenthal (Germany).

At the same meeting, Dr. Gary Pilkington, Ulverston, United Kingdom, was elected secretary of the Working Party, in charge for the years 2016-2019.

Prof Fabiano holds a PhD in Environmental Technology and Economy from the international inter-university consortium, Italy and a MS in chemical engineering from Genoa University, Italy. Currently, he is associate professor at the Polytechnic School of Genoa University, Italy. He has been the Italian academic delegate for the Working Party on Loss Prevention since 2007 and was chair of the 14th International Loss Prevention Symposium in Florence, Italy, in 2013. His research interests include process and occupational safety, biotechnological and food safety, methodologies and modeling for environmental and accidental quantitative risk assessment (QRA), and accident investigation.



*Chairmen of LPWP past and present (from left to right): Bruno Fabiano, Eddy De Rademaeker, Georg Suter, and Hans Pasman)*



On 8 June 2016, **Prof. Christoph Herwig**, Vienna, Austria, took over the chairmanship of the Working Party on Quality by Design. He succeeds Prof. Krist Gernaey, the initiator and first Chair of this new EFCE Working Party.

Christoph Herwig, bioprocess engineer, graduated from the process engineering department, university of technology RWTH Aachen in 1994. He worked in industry in the design and commissioning of large chemical facilities prior to enter his interdisciplinary PhD studies at the University of Technology EPFL, Lausanne Switzerland in the field of bioprocess identification. Subsequently he positioned himself at the interface between bioprocess development and facility design of biopharmaceutical facilities working in different companies from process development over engineering services to biopharmaceutical production. Since 2008, he is full professor for biochemical engineering at the Vienna University of Technology. The research area focuses on the development of method of science based and efficient bioprocess development for biopharmaceuticals



The EFCE Working Party on Education elected **Prof. Eric Schaer**, Nancy, France, to the position of Chair of the Working Party from August 2016. He succeeds Dr. Martin Pitt who held the position for six years. Prof. Marie Debacq-Lapassat, Paris, France, took over

the position of secretary of the Working Party from Prof. Jarka Glassey.

Prof Schaer teaches chemical reaction engineering, catalysis, heat exchangers and crystallisation at the Ecole Nationale Supérieure des Industries Chimiques (ENSIC) in Nancy, France. His research interests include homogeneous reactions, liquid solid reactions, gas solid catalysed reactions and reactions in complex media. In 2003, he received the Grand Jury award of the Inffolor contest for pedagogical innovation in Lorraine.

## EFCE awards



### EFCE and its Working Party on Electrochemical Engineering call for nominations for the Carl Wagner Medal

The **Carl Wagner Medal of Excellence in Electrochemical Engineering** is awarded every three years by the Working Party on Electrochemical Engineering (WPEE) of the European Federation of Chemical Engineers (EFCE) to a European researcher under the age of 35 for outstanding contributions to research in applied electrochemistry or electrochemical engineering.

In 2017 the medal will be presented at the 11th European Symposium on Electrochemical Engineering (11th ESEE; <http://electrochemical-engineering.eu/2017/>), Prague, Czech Republic, 4-8 June 2017, where the recipient of the medal will be invited to give a lecture. The award also comprises a cash award of EUR 1250, a certificate and a travel grant (not exceeding EUR 500) to attend the 11th ESEE.

Nominations for the medal, with supporting documentation (letter of support of the nomination by a senior electrochemist or electrochemical engineer, curriculum vitae, list of publications) should be sent electronically before **January 20, 2017** to the WPEE Chairman:

**Prof. M. Rodrigo, University of Castilla La Mancha, Ciudad Real, Spain**  
**e-mail: Manuel.Rodrigo@uclm.es**



## Call for Applications - EFCE Student Mobility Award 2017

### EFCE once again welcomes applications for prestigious Student Mobility Award.

Designed to promote mobility among European chemical engineering students, the award is presented every two years to the best European students of chemical engineering who have spent one or more semesters studying abroad.

The EFCE Student Mobility Award 2017 will consist of three prizes worth €2,000, €1500 and €1000 respectively. The prizes will be awarded during the 10th World Congress of Chemical Engineering in Barcelona, Spain, from 1 to 5 October 2017. The Award also includes an invitation to the World Congress and a travel grant of up to €500.

Any student who is a citizen of a European country in which EFCE is represented can apply for the EFCE Student Mobility Award if they have successfully studied for at least one semester ( $\geq 30$  ECTU) in first or second cycle study programmes in chemical engineering in each of two or more different countries.

For details on the application procedure, supporting documentation and to download the application form, please visit the EFCE website at:

**[http://www.efce.info/Student\\_Mobility\\_Award.html](http://www.efce.info/Student_Mobility_Award.html)**

All documents should be submitted in English no later than 2 years after graduation.

**The deadline for submission of applications is 28 February 2017.**

**The 2017 EFCE Student Mobility Award is generously sponsored by BASF SE.**

**BASF**  
We create chemistry

# 10th European PhD Workshop on Food Engineering and Technology

Uzwil, Switzerland April 28-29

The **10th European PhD Workshop on Food Engineering and Technology** took place at the end of April at Bühler in Uzwil and brought together some of the best young researchers in food engineering. "The challenges we face in feeding almost 10 billion people by the year 2050 require innovations across the whole value chain," explains Ian Roberts, Chief Technology Officer of Bühler.

The event saw 16 PhD students from 12 European countries presenting their research. The projects were then evaluated by leading food engineering professors from European universities and representatives from industry partners like Bühler, Nestlé, Barilla, Givaudan, and General Mills. The Bühler Food Engineering Award was awarded for the first time this year and complements the Julius Maggi Research Award, which is also presented at the event and is sponsored by Nestlé.

## **Bühler Food Engineering Award**

**2016 winner:** The first place went to Josef Hörmansperger, PhD candidate from ETH Zurich, for developing a microbial decontamination method which is based on a vacuum-steam-vacuum process. The process allows the decontamination of food powders which are sensitive to heat or moisture, for example milk powder, without compromising their quality.

## **Julius Maggi Research Award 2016**

**winner:** The first place of the Julius Maggi Research Award went to Pia Meinschmidt, PhD candidate from the Technical University in Munich and the Fraunhofer IVV in Freising, Germany, for examining non-thermal food processing technologies for the reduction of soy allergy. These technologies could be used to produce low-allergen food ingredients that combine good taste and, at the same time, address the growing concerns many consumers have about different food allergies.

## **Ongoing commitment to food engineering and technology**

The 10th European PhD Workshop on Food Engineering and Technology was hosted by Bühler's Corporate Technology team in collaboration with the European Federation of Food Science and Technology (EFFoST), the European Federation of Chemical Engineering (EFCE) and the European Academy of Food

Engineering (EAFE). Every year, the event brings together the best PhD students from all over Europe. PhD candidates in Food Engineering and Technology can submit their research projects on any subject at the interface of food and engineering.

**More information about the event is available on <http://www.phdfoodworkshop.com>.**

## **Bühler Food Engineering Award 2016 (sponsored by Bühler)**

- **Winner: Josef Hörmansperger, ETH Zurich, Switzerland**  
"Quality preservation of functional food powders by short-time Vacuum-Steam-Vacuum decontamination treatment"
- **2nd place: Jana Bahtz, ETH Zurich, Switzerland**  
"Development of a W1/O/W2 emulsion powderization process preserving an osmotic swelling capacity"
- **3rd place: Christian Hertwig, Technical University Berlin, Germany**  
"Cold plasma – Comparison of different plasma sources and its influence on microbial inactivation"

## **Julius Maggi Research Award 2016 (sponsored by Nestlé):**

- **Winner: Pia Meinschmidt, Technical University Munich / Fraunhofer IVV, Germany**  
"Low-Allergen Food Ingredients – An Insight into Nonthermal Food Processing Technologies to Mitigate Soybean Allergy"

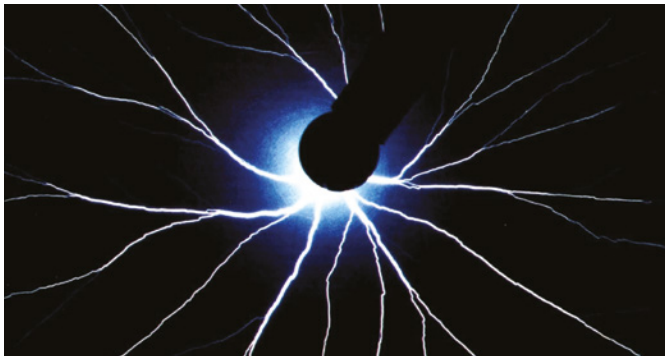
Two candidates received the second place:

- **2nd place: Ulrike Schmidt, Karlsruhe Institute of Technology, Germany**  
"Citrus pectin as a hydrocolloid emulsifier: Emulsifying and emulsion stabilizing properties"
- **2nd place: Kemal Aganovic, DIL e.V. / KZ Leuven, Belgium**  
"Headspace fingerprinting and sensory evaluation to discriminate between traditional and alternative pasteurization of watermelon juice"

# EFCE Events

Specialised events organized by/on behalf of EFCE:

**Electrostatics 2017**  
*Frankfurt am Main, Germany, 10-13 April 2017*  
*(EFCE Event No. 735)*



The International Conference on Electrostatics provides a unique interdisciplinary forum for discussion about the electrostatic phenomena and the industrial applications. Fundamentals, applications, hazards, measuring techniques, standards and other related topics are within the scope of the conference. The Conference is organised by Dechema in Frankfurt on behalf of the Working Party Static Electricity in Industry.

The preliminary programme is online available in the Congress Planner ([https://dechema.converia.de/frontend/index.php?page\\_id=2432](https://dechema.converia.de/frontend/index.php?page_id=2432))

Exhibition and sponsorship: During the conference an exhibition of scientific instruments, equipment and techniques will be held from Monday to Wednesday. Take advantage of the Sponsorship and Exhibition offers.

**Online registration is open! Congress website:** <http://www.dechema.de/en/electrostatics2017.html>

## Save the date!

**Distillation & Absorption 2018**  
*Florence, Italy, 16-19 September 2018*  
*(EFCE Event No. 737)*

**Website:** <http://www.aidic.it/da2018/index.php>



**International Symposium**  
**Reliable Flow of Particulate Solids V – RELPOWFLO V**  
*Skien, Norway, 13-15 June 2017*  
*(EFCE Event No. 734)*

RELPOWFLO V will highlight recent developments and investigations in the field of powder technology and provide networking opportunities for academics industrialists alike.

### Topics:

- Drying of particulate materials
- Environmental aspects
- Industrial case studies
- Measurements, controls & on-line monitoring
- Mechanical conveyor & feeders
- Modelling and fundamentals of powder systems
- Particle & bulk characterization
- Pneumatic, hydraulic & capsule conveying
- Powder coating
- Process analytical technology in powder applications
- Production & handling of nanoparticles
- Production of particulate solids (crystallization, precipitation, etc.)
- Sample taking/sampling in powder systems;
- Segregation & mixing
- Separation & classification
- Size enlargement
- Size reduction (crushing, grinding, milling)
- Solids processing
- Storage of bulk solids

**The Call for Papers is open. Deadline for abstract submission: 1 November 2016**

**Symposium website:**  
<http://www.relpowflo.no>

**11th European Symposium on Electrochemical Engineering – ESEE**  
*Prague, Czech Republic, 4-8 June 2017(EFCE Event No. 740)*

**Motto: Today's research for tomorrow's technologies**

The main target of the 11th European Symposium on Electrochemical Engineering (ESEE) is to provide a focused forum for researchers and users of electrochemical technologies in a broad spectrum of existing and emerging fields of applications and thus to trigger an intense exchange of ideas and information. The programme structure is designed to offer sufficient time both for oral and poster presentations and at the same time for informal discussions outside the lecture halls. The Symposium is organised by University of Chemistry and Technology Prague in cooperation with the EFCE Working Party on Electrochemical Engineering.

**Topics:**

- Green technologies for sustainable development
- Electrocatalysis and electrochemical technologies
- Safe water and air
- Energy conversion processes
- Bioelectrochemistry - a launch-pad for new frontiers in electrochemical technologies
- Surface treatment and corrosion engineering

**Plenary speakers:** Prof. Anthony A. Wragg, University of Exeter, UK; Professor Mark E. Orazem, University of Florida, U.S.A.; Professor Takayuki Homma, Waseda University, Japan; Dr. Juergen Kintrup, Covestro Deutschland AG, Germany.

**The Call for Papers is open. Deadline for abstract submission: 31 December 2016**

**Symposium website: <http://www.electrochemical-engineering.eu/2017/>**

**6th European Drying Conference - EuroDrying 2017**  
*Liège, Belgium, 19-21 June 2017 (EFCE Event No. 738)*

**Theme: Innovations in drying: bridging the gap between academia and industry**

The European Drying Conference series is supported by the Working Party on Drying (WPD).

The 6th edition, EuroDrying'2017, will be jointly organized by University of Liège and the Free University of Brussels, with the support of the Dutch Working Group on Drying (NWGD).

The main scope of the conference is to provide a scientific programme of cutting-edge research in drying and development and applications in drying and dewatering technologies. Leading researchers from Europe and all around the globe are expected. A special session will be dedicated to industrial issues and case studies in order to highlight or to identify intersections between research in academia and industrial needs.

**Topics:**

Contributions from entire spectrum of drying and dewatering science and technology are eligible, such as:

- Fundamentals of drying
- Modelling and simulation
- Physical properties
- Chemical and polymer materials
- Food and agricultural materials
- Pharmaceutical and biomaterials
- Measurement and process control
- Industrial processes and equipment
- Innovative technologies
- Energy and environmental implications
- Industrial case studies.

**The Call for Papers is open. Deadline for abstract submission: 15 December 2016**

**Website: <http://events.ulg.ac.be/eurodrying2017/>**

**An extended list of events is available at <http://www.efce.info/events.html>**

# Science and Technology

## Bulk Solids Centre Czech Republic (BSC)

**The European Federation of Chemical Engineering godfathered the Bulk Solids Centre Czech Republic (BSC), providing during all this time advice, guidance and experience through the Working Party on Mechanics of Particulate Solids (WPMS).**

This new workplace in the Czech university is an open space for international collaborations across Europe and beyond in fields associated with bulk solids handling. Here, you will find a research group plenty of energy and enthusiasm headed by Prof. Jiri Zegzulka, internationally recognised for his expertise in this field, with modern facilities, tools and equipment to face new challenges. The opening ceremony of BSC was on 8th April 2016 in the Innovation Centre VSB-TU Ostrava. The Working Party on Mechanics of Particulate Solids of EFCE represented by its chairman Prof. Álvaro Ramírez-Gómez opened the centre.

The Bulk Solids Centre Czech Republic is part of the VSB - Technical University of Ostrava and its activity is oriented to the understanding of the behaviour of bulk solids during handling and to transfer new technologies to industry. Basic science is being conducted, especially on the angle of internal friction. Many problems received from companies are tackled performing numerical simulations that are experimentally validated to provide innovative solutions to their needs, a good number of patents has been already derived from solutions proposed. The characterization of the bulk materials (mechanical-physical, chemical, geometrical, morpho-logical and many other properties) is also possible here, where many experience has been gained already. The types of studies in which BSC researchers have been involved

until now are very diverse and in many different sectors (chemical, civil, mining, agricultural...).

Nowadays, within the doctoral programme "Transport and Material Handling" of the VSB - Technical University of



Figure 1: The opening ceremony (from the left Assoc. Prof. S. Mišák, Assoc. Prof. A. Király, Prof. Dr. Á. Ramírez-Gómez, Prof. Dr. J. Zegzulka).

## EFCE Forum on Energy Prague Czech Republic, 27 August 2016

The EFCE Forum on Energy featured an overview of the key challenges in the field of energy and how chemical engineers can contribute to developing solutions. The speakers were:

### **Management of energy and chemical engineering - the role of the chemical engineer**

Prof Jean Marc LeLann, University of Toulouse/INP-Ensiacet, France

### **CO<sub>2</sub>, biomass, storage, efficiency: the role of chemical engineering in the energy transition**

Prof Francois Marechal, Ecole Polytechnique Federale de Lausanne, Switzerland

### **Uncertainty and complexity in the design of biomass-based energy systems - the perfect chemical engineering job?**

Prof Fabrizio Bezzo, CAPE Lab, University of Padova, Italy

### **Energy Future - oil and gas and the contribution of industrial ecology**

Prof Richard Darton, University of Oxford and IChemE Energy Centre, UK

### **US Department of Energy efforts in Process Intensification**

June Wispelwey, Executive Director, AIChE

A video recording of the EFCE Forum on Energy is now available on YouTube at:

<https://www.youtube.com/watch?v=UPIZeugnth4>

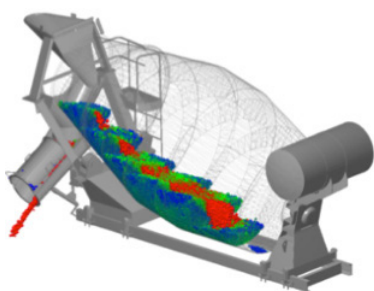


Figure 2: Simulation of a truck mixer in operation (MSc. J. Hlosta).

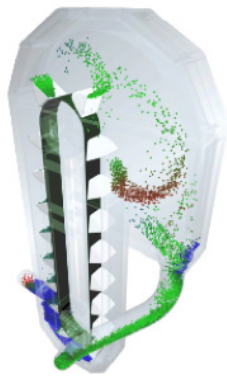


Figure 3: Simulation and prototype for bucket shape optimization.

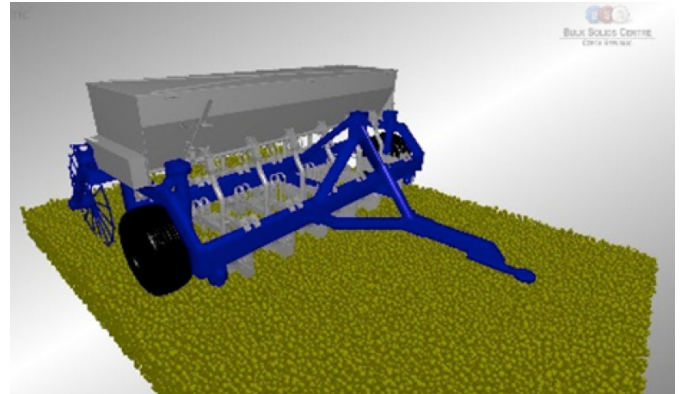


Figure 4: Simulation of sowing operation (MSc. M. Zidek).

Ostrava, a doctoral thesis is being developed in BSC to solve mixing problems of fly ash with other components. Figure 2 shows a truck mixer in operation mixing fly ash for the production of building material.

Another research area in which work is being carried out is in the conveying of materials. Research scientists are facing transport problems in different types of conveyors: screw and vibratory conveyors, and bucket and rake elevators. BSC has twelve prototypes of diverse machinery which allow validating and verifying numerical models developed (their physical and technical limitations). They have been successfully used already to solve handling problems to several companies, an example is shown in Fig. 3.

Research developed in the agricultural field where companies have been already involved focuses in tillage, sowing and harvesting operations (Fig. 4).

These are only a few examples of the activity carried out.

**If you are interested to contact with the Bulk Solids Centre of the Czech Republic please send an email to [jiri.zegzulka@vsb.cz](mailto:jiri.zegzulka@vsb.cz), or to the postal address Bulk Solids Centre, Prof. Jiri Ze-gzulka, 17. Listopadu 15, 708 33 Ostrava – Poruba, Czech Republic.**

*Working Party on Mechanics of Particulate Solids, EFCE*  
 Prof. Dr. Jiří Zegzulka  
 Prof. Dr. Álvaro Ramírez-Gómez  
 Dr. Jan Nečas



## Workshop on Methods for Accelerating Scalable Bioprocess Development

*QbD oriented methodology for efficient and robust development of biopharmaceutical processes*

**Vienna, Austria, 10-11 November 2016**

The TU Wien, the CD Laboratory on Methods for Improved Bioprocesses and the EFCE Working Party on Quality by Design cordially invites you to our Workshop on Methods for Accelerating Scalable Bioprocess Development.

The development of bioprocesses is still time intensive tasks and needs innovative approaches to anticipate scaling effects as well as to allow sustainable learning across products and processes. This workshop aims at familiarizing with advanced methods in bioprocess development in order to develop a scalable bioprocess in a shorter period of time. The focus is on biopharmaceutical processes; however the methods are generic and are therefore also applicable to other biotech products. The workshop will focus on presenting and working with methodological strategies generating reliable data, and converting them into information and knowledge. This will be shown equally on Screening Task, Upstream Operations and Integrated Process Development and will be put in to context of Quality by Design (QbD).

**More information and registration:**  
[http://www.vt.tuwien.ac.at/biochemical\\_engineering/veranstaltungen/2016\\_workshop\\_on\\_methods\\_for\\_accelerating\\_scalable\\_bioprocess\\_development/](http://www.vt.tuwien.ac.at/biochemical_engineering/veranstaltungen/2016_workshop_on_methods_for_accelerating_scalable_bioprocess_development/)



## EFCE Annual Report

### The 2015 Annual Report for EFCE is now available.

2015 was a new chapter for EFCE. The Federation began its first year as a formally registered entity. The process of establishing EFCE as a registered Charitable Incorporated Organisation was completed in December 2014, after all the legal and administrative requirements for the transition were satisfied. The year also saw the election of a new set of trustees, who will serve for a two-year period starting 1 January 2016.

To read more, download your copy at [http://efce.info/efce\\_media/EFCE+Annual+report+2015.pdf](http://efce.info/efce_media/EFCE+Annual+report+2015.pdf)



## Contact

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*Every effort is made to ensure the factual accuracy of the content of this e-newsletter, but EFCE cannot accept any responsibility for errors.*