

SUMMARY REPORT



THE FIRST WORLD ENGINEERING DAY

March 4th, 2020



In 2018, as part of its 50th-anniversary celebrations, WFEO initiated the proposal to establish a World Engineering Day on March 4th, to create a unique opportunity every year to bring governments, academies, industrial/business sectors, civil societies, educational institutes, media, and the public together to celebrate engineering accomplishments and to raise awareness of the role of engineering for sustainable development globally, and to encourage the next generation of engineers especially girls. This initiative soon received support from around 80 peak international and national institutions of engineering and was submitted to UNESCO by China and Namibia and seconded by more than 40 nations.

On April 19th, 2019, the UNESCO Executive Board recommended unanimously to the UNESCO Member States to declare March 4th as World Engineering Day for Sustainable Development, and the proposal was approved unanimously on November 19th, 2019, at the 40th session of UNESCO General Conference.

To prepare the inauguration of the World Engineering Day (WED) in 2020, a working group was formed in 2019, comprising then WFEO President Dr Marlene Kanga, President-Elect Prof Gong Ke, WFEO secretariat and WFEO CEIT secretariat, the representatives of WED partners of IESF, DiscoverE and Marchmont Communications. Prof. Gong Ke chaired the Working Group. The main works done by the group include:

- Develop a Concept Note for the inaugural celebration for the information of UNESCO
- Develop the strategy for WED –not a WFEO project but one owned by the world
- Accordingly – a website was established in 2019, <https://worldengineeringday.net/>
- A new logo was designed in 2019, representing the UN Sustainable Development Goals, the world and engineering. This logo was registered, as part of the WED trademark, at the French Intellectual Property authority (INPI).
- Organize the inauguration ceremony and an engineering forum on March 4th, 2020 with UNESCO together, liaise with relevant and international partners.
- Organize the communication campaign of WED, with the assistance of Marchmont Communications
- Select photos from those provided by WFEO members after a global call and designing the posters for the UNESCO fence exhibition,
- Develop 10-minutes podcasts on each of the UN Sustainable Development Goals,
- Young engineers competition for the innovative solutions of each SDG with WFEO YE/FL, IChemE, FIDIC, Young Engineers Europe and students at Nankai University.

Though the March 4th event at UNESCO Headquarters was cancelled because of COVID-19 outbreak, the announcements and outcomes of the celebration were placed on line in a quickly developed Webpage of "[Global Online Celebration of the World Engineering day](#)". This received 6,231 views. There were 88 events held in 40 countries including 4 international events, more than 9 papers published or cited by more than 100 top-tier media. The social media reached 30 million people potentially. WFEO released a [statement calling engineers worldwide to fight COVID-19 on March 4th](#).

WED Logo & Website

www.worldengineeringday.net and www.worldengineeringday.org have been registered. Following the basic idea of an international day, the WED official website was designed and set up in six UN languages, as a platform for global celebration.

There are **360,677** views in one month and **89,590 views** on March 4th, 2020. The corresponding numbers for the Global Online Celebration pages are **6,231** views and **4,699** views.

Windows
Documents, Messages
& Introduction

Gallery
Events, Partners
& News

Share
Posters, Podcasts
& Videos

Windows to introduce WED, show WED documents from UNESCO, key messages, etc.

Gallery to gather and show WED events all around the globe, organizers and partners, news and reports on WED.

Share of guidelines and communication materials including logo, posters, videos, etc. to organize local or regional events

WED logo has been designed and registered in six UN languages, and in Portuguese and Japanese as well. The 17 COLOURS of the UN Sustainable Development Goals are included in the logo and represent the commitment to the UN 2030 Agenda. The image of the GLOBE is incorporated into the logo to show that this is a global day for everyone. The GEARS of the logo show that engineers are driving the world forward and that engineering is essential for sustainable development.



Global Celebration

The working group reached out to partners, member organizations, and more than **80 companies, trade bodies and academies** to raise awareness of World Engineering Day. Some major companies or organisations such as SAP, Microsoft, Airbus, GREE, and WGIC (logos of supporting organisations on page 17) have engaged positively around the event to make WED an event of great magnitude. Around **90 events** are held in over **40 countries/regions** for the celebration of the first World Engineering Day.



Global Online Celebration

[WED Global Online Celebration](#) was planned, designed, and set up right after the decision of the WFEO Executive Board on February 26th to postpone the Inaugural WED Celebration at UNESCO Headquarters as the planning was overtaken by the increasing risk of the spread of coronavirus worldwide. Nearly the whole program of the Celebration at UNESCO Headquarters on March 4th has been transferred to the website, including WED videos, WED messages from UN, UNESCO, WFEO and global engineering community, WFEO's voices on emerging technologies, COVID-19, climate change, women and SIDS, WED2020 podcasts, local and regional events, results of surveys and competitions, etc.

WED Videos

The Video addresses from [Prof. GONG Ke](#), [Dr. Marlene Kanga](#) and [Dr. Peggy Oti-Boateng](#), the [WED Video-March 4th](#), [WED logo animation](#), the video of “[A Message from World Engineering Day](#)” and the other videos of the [Design and Promotion Competition](#) have attracted more than **12,000 views** on main international video streaming platforms.



WED on Social Media

Social media toolkits are created by Marchmont Communications, to promote World Engineering Day, including social media graphics, videos and hashtag #WorldEngDay2020.

Hashtag #WorldEngDay2020 has achieved a potential reach of **17.4 million** with more than 4,000 conversations online and 8,500 engagements. #WorldEngDay2020 was the 29th trending topic in Australia and 33rd in the UK on March 4th.

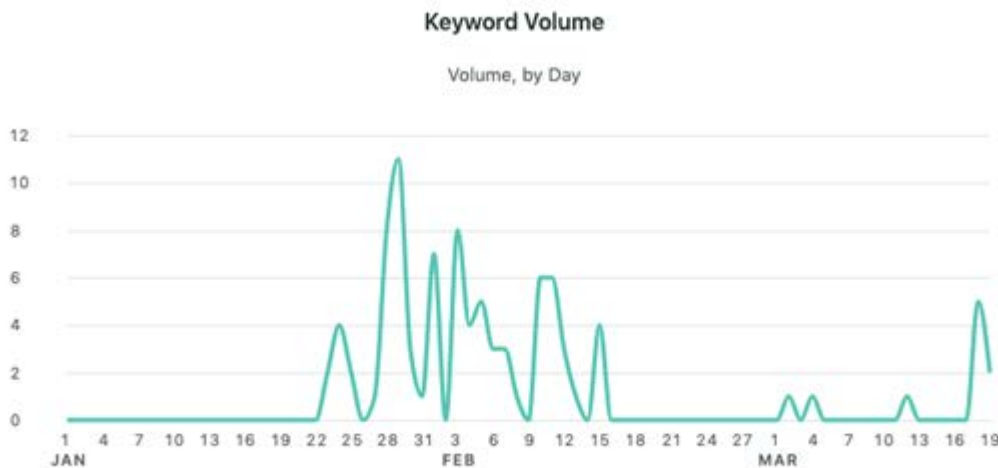
The WED WeChat official account, till now, has **2,639 followers**, and 21 posts which have got 23603 views in total. Hashtag #世界工程日 (“World Engineering Day” in Chinese) on Weibo, which has achieved a potential reach of **92,000**.

Influencers L2	Posts	Reach	Reach per mention	Engagement	Engagement per mention
UNESCO @UNESCO	2	6.4M	3.2M	1.2K	593
Muhyba @JustMuhyba	1	1.4K	1.4K	567	567
ABUSRC media @ABUSRCmedia	1	9K	9K	316	316
Airbus @Airbus	1	665.1K	665.1K	313	313
This is Engineering @ThisIsEng	1	9.7K	9.7K	310	310

Platform	
Twitter	17,400,000 potential reach
WeChat	23,603 Views
Weibo	92,000 potential reach
Video Streaming	12,000 views

Following the Young Engineers Competition on SDGs that you can see in more detail in page 10, the following information describes its social media campaign.

- There have been **93 shares** of the <http://worldengineeringday.net/young-eng2020/> weblink on Twitter since January 22, including retweets.
- News surrounding the 2020 Young Engineers Competition was shared directly by the following profiles:
 - **Engineers Australia** (@EngAustralia) – 14.6k followers
 - **Grantham Imperial** (@Grantham_IC) – 10.1k followers
 - **VU Engineering** (@VUEngineering) – 3.9k followers
 - **Imperial Enterprise Lab** (@ICEnterpriseLab) – 3.9k followers
 - **Imperial ChemEng** (@ImperialChemEng) – 3.8k followers
- **January 29** was the peak day for Tweets sharing the <http://worldengineeringday.net/young-eng2020/> URL (sample shown below).



[url:worldengineeringday.net/young-eng2020/](http://worldengineeringday.net/young-eng2020/) was used most on **Wednesday, January 29, 2020**, a total of **11** times.



The launch of the first [World Engineering Day for Sustainable Development](#) that was planned to take place on 4 March 2020 at UNESCO Headquarters in Room II and XI (Fontenoy Building), was cancelled due to the precautionary measures adopted globally because of the Coronavirus spread.

A pdf brochure with messages of the day is available on the UNESCO Digital Library:

[Celebrating World Engineering Day for Sustainable Development](#)

An exhibition was displayed on the UNESCO gates in Paris, France.

[Exhibition visuals](#)



Global Celebration

Messages and Congratulatory Letters



“Best wishes for the success of the event.”

Antonio Guterres
UN General Secretary



“Engineering has helped to shape the world for millennia and now more than ever, the world needs engineering.”

Audrey Azoulay
Director-General of UNESCO



Under the High Patronage of
Mr Emmanuel MACRON
President of the French Republic



CAST – CAE – National Commission of China for UNESCO Declaration

Engineering for Sustainable Development--Celebrating the Inaugural World Engineering Day



Congratulatory Letters from Members and Partners

The World Engineering Day Celebration improves the profile of engineering in achieving the U.N. Sustainable Development Goals with messages and congratulations from the United Nations, its organs and governments. Executive Office of the U.N. Secretary-General conveyed Eng. Antonio Guterres's best wishes to the World Engineering Day Event. Ms Audrey Azoulay, Director-General of UNESCO, delivered [a message on March 4th, 2020](#), declaring "Engineering has helped to shape the world for millennia and now more than ever, the world needs engineering" and underlying engineering's key role to sustainable development. Mr Emmanuel MACRON, President of the French Republic, places World Engineering Day Event under his High Patronage. Besides, officials from WFEO, engineering organizations, and leading engineering companies sent messages or congratulatory letters to WED celebration.

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Global Celebration

Global Engineer Survey

Global Engineer Survey, as a warming up of the global celebration, set out to explore the future of engineering—such as daunting global challenges, our ability to solve these challenges, factors that might limit our ability, and what might be the next big frontier in engineering, organized by Discover E in collaboration with WFEO.

10,077 engineers from 119 countries have spoken...With the right support, 18-24 year old engineers, technicians and technologists are the most optimistic that they can solve global challenges.

GLOBAL CHALLENGES

The top four global challenges for engineers in the next 25 years:



GLOBAL OPPORTUNITIES

Top three factors necessary to solve the challenges:



CAREERS

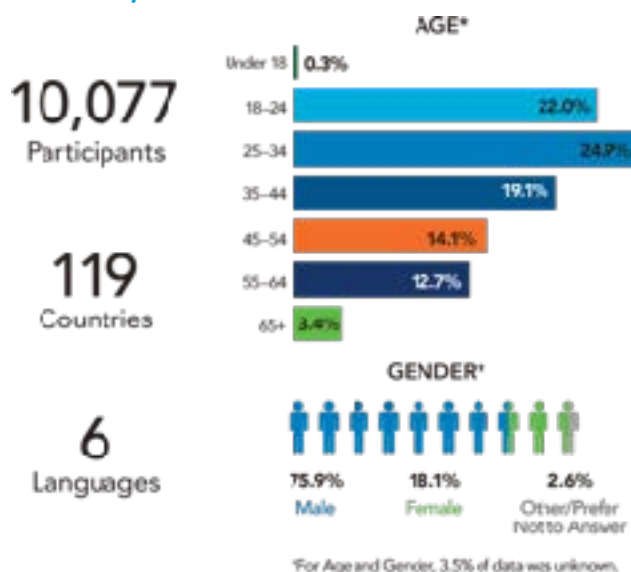
54% Believe that we will have a shortage of engineers in the future.

58% Believe that we will have a shortage of technicians and technologists in the future.

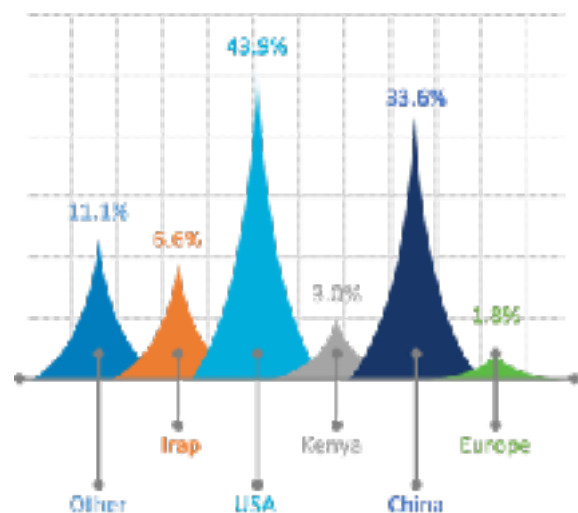
VOLUNTEERISM

96% Said that volunteering with primary and secondary students to introduce them to engineering was important.

Participants



Top Participating countries/regions



Young Engineers Competition on SDGs

World Federation of Engineering Organizations' Young Engineers/Future leaders Committee collaborated with IChemE (UK), FIDIC, European Young Engineers and students from Nankai University, to run a competition for early-career engineers from around the world. The goal of the competition was to highlight the work of young engineers and their engineering achievements in advancing the UN Sustainable Development Goals.

More than **400 young engineers** from more than **70 countries**, including some from the leading engineering universities of the world, showcased their projects to advance sustainable development through engineering.



Winner of Young Engineers

Competition: Ms Aida Rafat

Imperial College London UK

SDG 12: Reducing textile waste and reducing pollution from textile dyeing technologies.

There are 16 Highly Commended Entries focused on different SDGs from around the world.

Aida Rafat



WED Stamps and Philatelic Products

World Federation of Engineering Organizations (WFEO) and China Post Group Corporation Limited cooperated in designing and issuing a series of stamps and philatelic products for the first World Engineering Day, which includes a set of 12 stamps, a first-day cover, a souvenir sheet, a postcard and a stamp album. All these philatelic products are global limited edition.



WED 2020 Mini-Series

Engineering Heroes, with the support of the World Federation of Engineering Organizations, launched [18 mini-episodes of Podcasts](#). Each episode was aimed at helping the audience understand how engineers are perfectly placed, and already working, within each of the United Nations Sustainable Development Goals. More than **4,000 audiences** from more than **70 countries** listened to Podcast Episodes, each rated in the top 20% to top 50% of podcasts worldwide.

The report “WFEO Podcast for WED 2020” is available [in this page](#)



WED Design and Promotion Contest

A [Design and Promotion Contest](#) was launched to promote World Engineering Day among young people in China and attracted more than 2000 followers on social media.

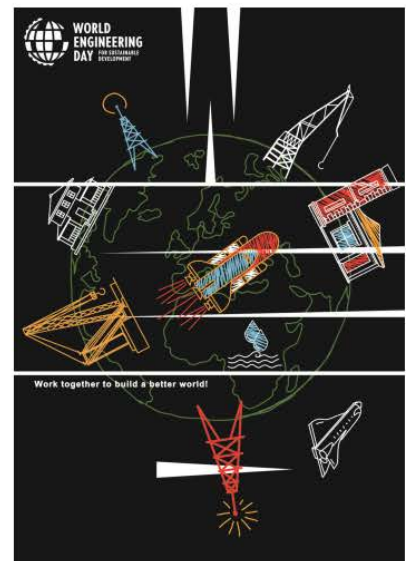
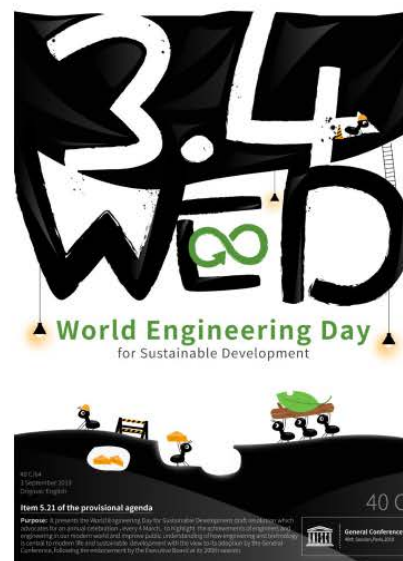
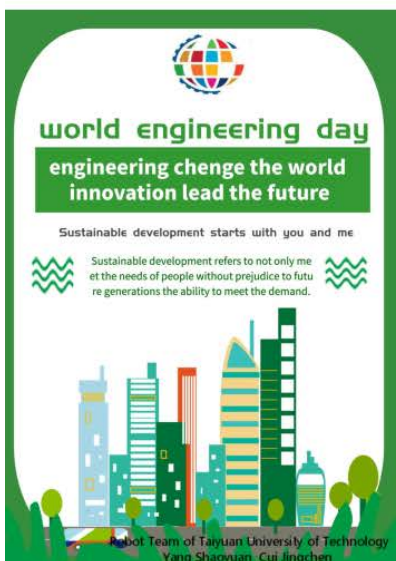
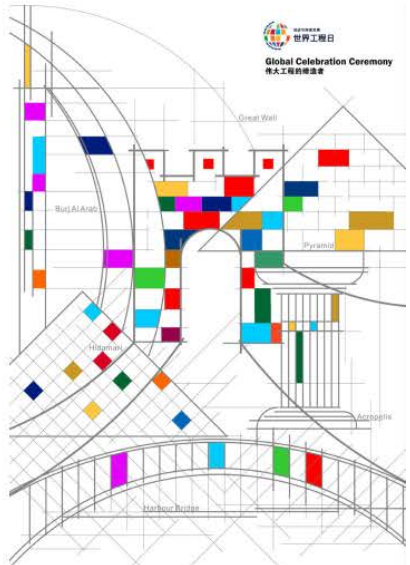
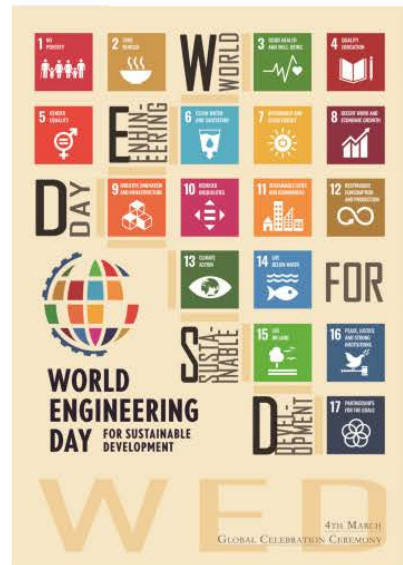
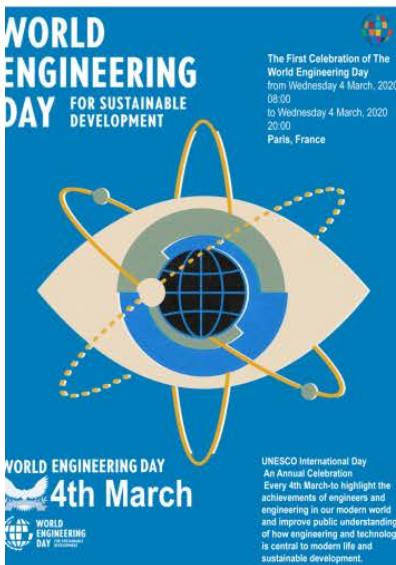
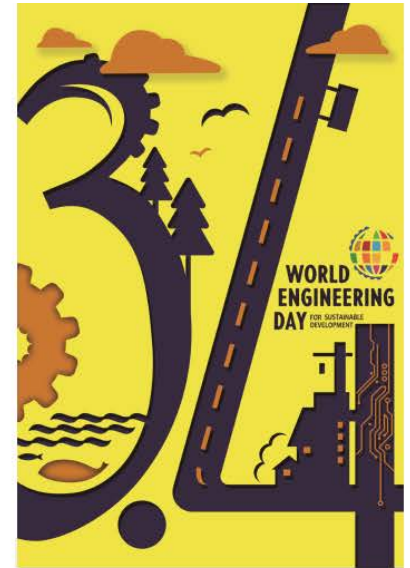
240 young individuals or teams registered the contest, **101 works** (poster or video) have been submitted despite of the strict lockdown during the Covid-19 epidemic. 9 posters and 4 videos have stood out after the online voting with 45208 votes and professional judges on the subjectivity, creativity, and artistry. The video of “**A Message from World Engineering Day**” has been selected as the promotion video for young people. The poster “WED Earth” has been selected to make the WED postcards.





**WORLD
ENGINEERING
DAY**

Global Celebration

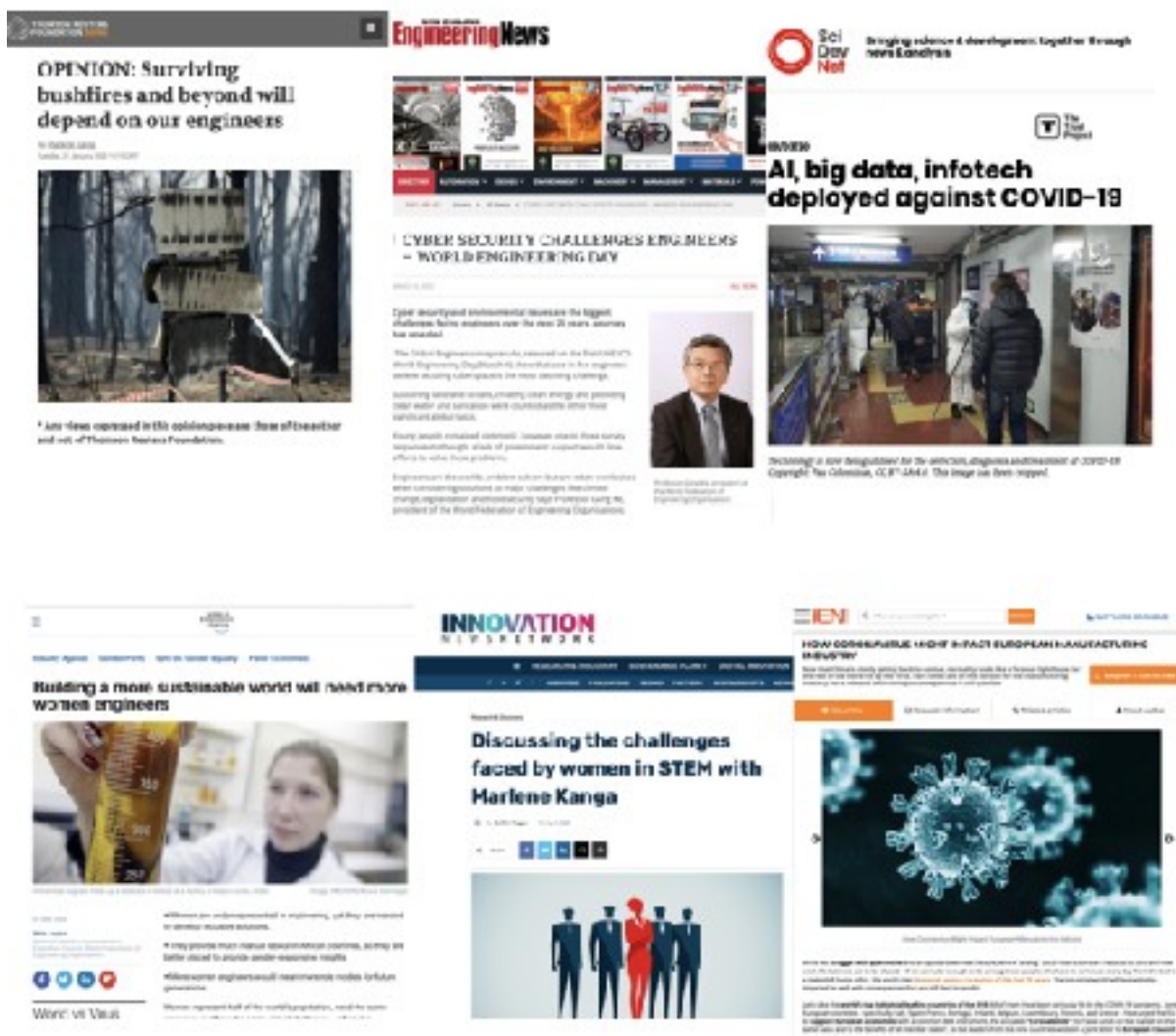


Op-Eds and interviews

The outreach resulted in coverage spanning global and specialist media across several regions. Four Op-Eds and two interviews with WFEO officials have been released on top-tier media:

- [Surviving bushfires and beyond will depend on our engineers-Marlene Kanga](#),
- [African leaders must invest in engineers to drive growth-Mustafa Shehu](#),
- [COVID-19 crisis reveals the extraordinary promise of bioengineering-GONG Ke](#),
- [Building a more sustainable world will need more women engineers-Ania Lopez](#)

Press releases on WED, engineering against COVID-19, WFEO Statement on COVID-19 Situation have been distributed to **more than 275 journalists** at global, top tier media, specialist titles and trade publications, including Reuters, Financial Times, World Economic Forum, XinhuaNet, CCTV, etc.



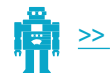
WFEO Statement on the COVID-19 Situation



WFEO made the statement “Engineering: Stepping up to the challenge of coronavirus and other global threats” on March 4th, 2020, following the developments in the global spread of COVID-19, with deep concern, both for those affected and those on the frontline of response.

WFEO calls on engineers, engineering community and all other stakeholders to address the urgent infrastructure needs to control coronavirus, “medical plus engineering” projects in helping medical treatment more efficiently and safely, monitoring with innovative technologies, collaboration and partnership. WFEO, following the slogan “Engineering for Sustainable Development”, will continue to accelerate the implementation of the SDGs and to lead the engineering profession in building a fairer, safer, more sustainable world.

Big Data and AI Principles in Engineering



In order to promote responsible conduct of Big Data and Artificial Intelligence (AI) application and innovation in engineering, World Federation of Engineering Organizations (WFEO) has formulated the following 7 Principles and releases it now on the first World Engineering Day Celebration. Big Data and AI Working Group is set up under WFEO-CEIT.

- Good for Humanity and Its Environment
- Inclusiveness, Fairness, Public Awareness and Empowerment
- Opening and Sharing while Respecting Privacy and Data Integrity
- Transparency
- Accountability
- Peace, Safety and Security
- Collaboration



Smart Cities – Adoption of Future Technologies



Committee for Information and Communication (CIC) of WFEO, in collaboration with KPMG, has released a report on Smart Cities “Smart Sustainable Cities is a Journey. Not a Final Destination”. Internet of Things, IoT application in pollution management, IoT application in city level power-utility business, Smart homes, and Industry 4.0 in waste management are enabling the ‘Smart Cities’ to transform lives.



Women in Engineering



Climate Emergency Declaration



Advance SDGs through Eng.

Main achievements

- **Increase of public awareness of the World Engineering Day and the role of engineering for SDGs**

By collectively working with partners worldwide, and gathering leaders from business, government, international organizations, academia, civil society and youth, the year-long campaign of the inaugural celebration of the World Engineering Day heightened public awareness of the Day and of the significant part engineering played in improving our way of living. World Engineering Day has also pointed out to the public the critical role engineering has been acting in advancing UN SDGs. A closer cooperation with UN agencies, UNESCO in particular, was reinforced and our partnership with multiple stakeholders was also strengthened.

- **Increase of WFEO's visibility and making voices heard from WFEO**

Focusing on the main topics with public concern worldwide, WFEO has released statement on fighting to COVID-19 attack, position paper on responsible conduct with Big Data and Artificial Intelligence in engineering, report on Smart Cities, reports about women in engineering and works of young engineers to achieving SDGs, Announcement of the global survey of future engineering, etc. WED showcased innovative methods to cope with the most pressing agendas facing humanity from engineering perspectives.

- **Encouraging women and youth**

Women and youth are two major themes of great importance for WED 2020. Professional accomplishments of women engineers as well as the diversity and innovation they bring to engineering are highly celebrated. Young girls and boys are encouraged to be exposed to proper engineering education and take engineering as a possible career choice.

- **Exploring systematic promotion mechanism**

Since the WED logo, website, channels with publicity teams and account on social media were all invented from zero, the preparation work for this year has gained valuable experience. With established platforms and networks, there have been solid foundation to build on and legacies to carry forward for incoming events in the next year.

Learnings

- **To stay active and visible**

Engineering related innovative applications, projects or events, and stories of engineers, etc. should be promoted continuously via websites, media and social media throughout the year.

- **To focus on public engineering education**

It is highly recommended to conduct more activities revolving around the theme of public engineering education in next WED campaign on raising public awareness of engineering.

- **To reach out to the younger generation**

The innovative ideas, voluntary spirit and great creativity of the younger generation contributed

Acknowledgement

to a large extent to the success of the first WED. It is essential to keep reaching out to the young and produce the next generation of engineering leaders.

- **To engage actively with members and UN agencies, UNESCO in particular**

WFEO members and UN agencies should be engaged on a larger scale. Members are encouraged to advertise engineering events and stories taking place in respective countries or territories leveraging WED resources available. WFEO shall work more closely with UN agencies, UNESCO in particular through the overall campaign featuring its role in advancing UN SDGs, and also the UN High-Level Political Forum, in the framework of the Scientific and Technological Community Major Group that is co-led by WFEO.

The first WED celebration was greatly obliged for the High Patronage of President of the French Republic, Mr. Emmanuel Macron, so was the endorsement given by UN Secretary General, Mr. Antonio Guterres, UNESCO Director General Ms. Audrey Azoulay, and SAP Global Executive Vice President, Mr. Mark Gibbs.

The preparation work was done in close collaboration with UNESCO Natural Sciences Sector, Division of Science Policy and Capacity Building, and partner organizations including IESF, IEEE, DiscoverE, Marchmont Communications, Engineering Heroes, IChemE, and UNESCO-ICEE among many others. The Working Group would like to express gratitude to our WFEO members and partner organisations for their unyielding support. We also thank our sponsors SAP, Intel, World Geospatial Industry Council ...

The efforts exerted by devoted colleagues from WFEO Secretariat, WFEO-CEIT, WFEO members, CAST in particular and other engineering institutions globally to amplify the influence of the first World Engineering Day and to exemplify solidarity of the engineering world are greatly appreciated.

Thanks to UNESCO and its member nations again for their initial support.

With just a decade left to achieve UN sustainable development goals, it is time for engineers to undertake a collective global effort to march forth, so that a sustainable future could be engineered for us and for our children.

WED Supporting organizations

ORGANIZERS



International Federation of
Engineering Education Societies



IChemE



PATRON



UNESCO

SPONSORS



INDUSTRIAL PARTNERS



Microsoft

AIRBUS



GREE