

# APORS 2021

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Triennial APORS Conference 2021

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**Daegu, Korea | June 24-26, 2021**





# **APORS 2021**

## **Daegu, Korea**

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# 1

## Letter of Invitation



Dear APORS Executive Committee Members,

It is our great honor and pleasure to propose a bid for hosting the 12th Conference of the Association of Asian-Pacific Operational Research Societies within IFORS in Daegu, Korea.

The Korean Operations Research and Management Science Society (KORMS) is the professional organization in Korea for individuals and organizations interested in the fields of Operations Research (OR) or Management Science (MS). Since the start of KORMS, the society has been actively involved in APORS and IFORS. It firstly hosted APORS in 1988, INFORMS-KORMS Seoul in 2000 and IFORS 2020 will be held in Seoul for the first time. For all these reasons, we believe KORMS has what it takes to host a highly successful APORS in 2021.

The proposed city for APORS 2021 would be Daegu which is located in the southeastern part of Korea. The city is home to over 11 universities and is an international hub for the electronics and information technology industries. The city is also known for being the first global convention city in Korea. Since 2013, the city of Daegu has hosted numerous conferences such as the 2013 World Energy Congress, 2015 World Water Forum and 2014 KORMS Summer conference as well. The City of Daegu sufficiently understands and shares the aims of the APORS and has committed to wholeheartedly supporting the 2021 conference.

The prospective local organizing committee, on behalf of the Korean Operations Research and Management Science Society (KORMS) and with the generous support of the City of Daegu, promises to exert its best efforts to ensure a successful APORS.

Thank you very much.



Lee, Chang Won  
Chair, APORS 2021 Bidding Committee  
of Korean Operations Research and Management Science Society (KORMS)





# 2

## Why Daegu, Korea?



# Host Society: Korean Operations Research and Management Science Society (KORMS)

The Korean Operations Research and Management Society was established on June 23, 1976. It is the professional organization in Korea for individuals and organizations interested in the fields of Operations Research (OR) or Management Science (MS).

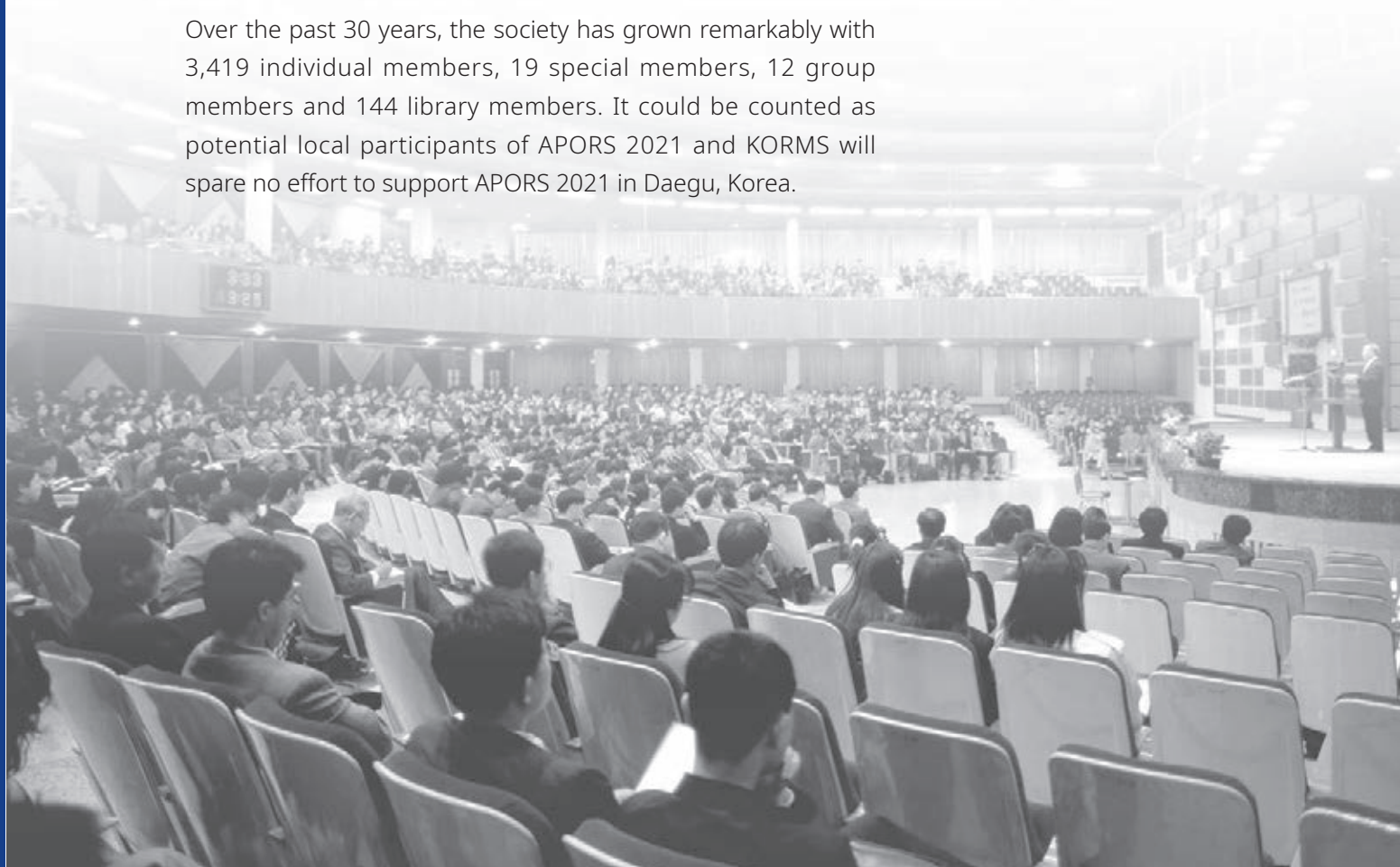
Its main objectives are to promote the study and application of OR/MS, to disseminate knowledge through the publication of research results and informal exchange of information. In this sense, APORS 2021 could be a big chance to promote Korean OR and MS studies for the first time since 1988.

Moreover, its international affiliation in IFORS and APORS, six special interest groups, and 5 regional branches will strongly promote a Daegu APORS 2021 conference.

Over the past 30 years, the society has grown remarkably with 3,419 individual members, 19 special members, 12 group members and 144 library members. It could be counted as potential local participants of APORS 2021 and KORMS will spare no effort to support APORS 2021 in Daegu, Korea.



Ryu, Choonho, KORMS President



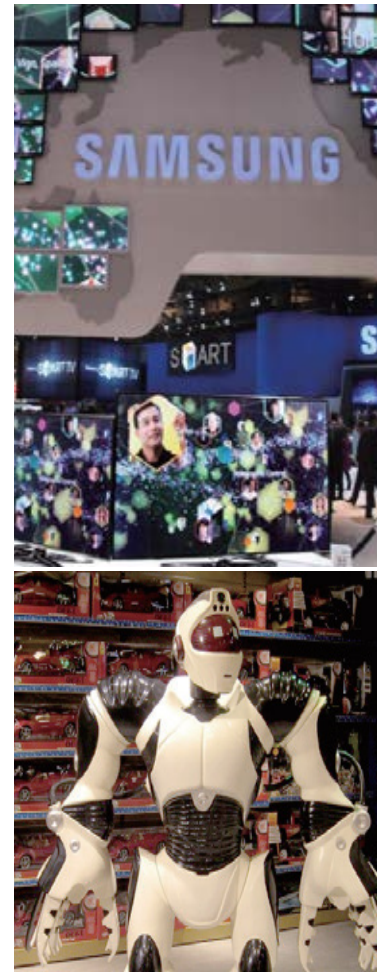
# Smart City, Daegu

Located in the southeastern part of Korea, Daegu has long been a center of technology, education and global conventions in Korea, and has a population, with a population of 2.5 million people.

Built on these fundamental elements, the city has begun expanding into future industries, focusing mainly on the IT industries and robotics industries. Daegu is well equipped for research into and the production of automobiles, electronics, and ICT manufacturing, and offers various related research institutes across the region.

Moreover, the city is the birthplace of the Samsung Group and built the Daegu Samsung Creative Campus with a vision to launch Korea's own Silicon Valley. The campus actively helps to incubate numerous startup companies in ICT, AI, AR/VR and robotics.

Not only Samsung, but also there are many other global companies in the area, including LG, POSCO, Hyundai, and SK Hynix. These corporations will be involved in APORS 2021 as participants or as destinations on the technical tour.



## Global Companies Presence



# City of Education

Daegu is a traditionally renowned educational city, intent on constantly evolving its educational environment.

There are 28 universities and 25 colleges in and around Daegu, where various international events and conferences have been held.

In particular, two major universities with active programs in Operational Research are located in the city: Yeongnam University and Daegu University.

In addition, there are universities teaching Business Management and Business Administration as major courses in the Department of Business. Their students will likely be potential participants of APORS 2021.

For these reasons, Daegu offers opportunities for knowledge exchange about Operational Research local students and faculties and international participants.



28  
Universities



25  
Colleges



291,440  
Students



15,283  
Faculties



Yeungnam University



Daegu University



Kyungpook National University



Keimyung University



# City of Education

## Universities and Colleges in Daegu and the surrounding area

University (28)	College (25)
Kyungpook National University	Yeungjin College
Keimyung University	Keimyung College University
Yeungnam University	Yeungnam University College
Youngnam Theological University and Seminary	Youngnam Foreign Language College
Catholic University of Daegu	Taegu Science University
Daegu National University of Education	Daegu Health College
Daegu University	Suseong College
Kyungil University	Kyongbuk Science College
Kumoh National Institute of Technology	Gyeongbuk College of Health
Handong Global University	Gimhae College
Kyungwoon University	Daegu Technical University
Daegu Haany University	Andong Science College
Dongyang University	Daekyeung University
Andong National University	Hosan University
Uiduk University	Sunlin University
Gyeongju University	Daegu Future College
Pohang University of Science and Technology	Sungduk College
Daegu Arts University	Pohang College
Gimcheon University	Gumi University
Dongguk University Gyeongju Campus	Sorabol College
Daegu University of Foreign Studies	Changwon Moonsung University
Kaya University	Gyeongnam Provincial Geocho College
Daeshin University	Masan University
Changwon National University	Korea Polytechnics
Changshin University	Korea Lift College
Kyungnam University	
Gimcheon University	
Busan Presbyterian University	



# Global Convention City

As of 2018, **Daegu is the 10th-ranked Asian convention city** worldwide for the hosting of global meetings according to the Union of International Associations (UIA), making it one of the world's most sought-after event hosts.

2024

**World Biomaterials Congress**

(4,000 delegates from 60 countries)

2021

**World Gas Conference**

(6,000 delegates from 95 countries)

2019

**ACM/IEEE International Conference on Human-Robot Interaction**

(500 delegates from 30 countries)

2018

**International Congress of Parasitology**

(3,000 delegates from 90 countries)

2017

**IEEE International Conference on Multisensor Fusion and Integration for Intelligent Systems 2017**

(200 delegates from 25 countries)

**World Congress of International Education Through Art**

(1,500 delegates from 80 countries)

2016

**IEEE International Embedded and Real-Time Computer Systems and Application Conference 2016**

(180 delegates from 15 countries)

2015

**World Water Forum**

(35,000 delegates from 173 countries)

**Asia-Pacific Chapter Meeting of International Society for Peritoneal Dialysis**

(1,500 delegates from 35 countries)

**International Solar Energy Society (ISES) Solar World Congress**

(2,000 delegates from 50 countries)





2015

**Congress of Laparoscopic Surgeons of Asia**

(1,000 delegates from 40 countries)

**Annual Conference of Tissue Engineering and Regenerative Medicine of International Society, Asia-Pacific Region**

(700 delegates/400 overseas delegates from 20 countries)



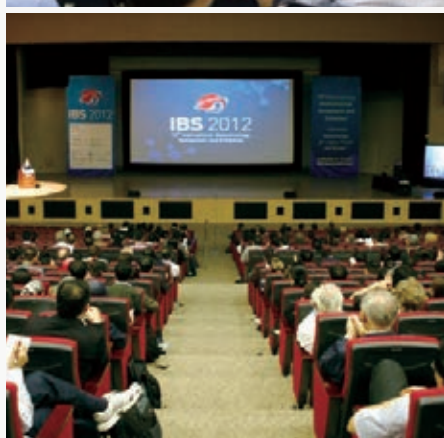
2013

**World Energy Congress**

(7,600 delegates from 123 countries)

**International Symposium on Halogenated Persistent Organic Pollutants**

(800 delegates from 45 countries)



2012

**International Congress of Entomology**

(2,400 delegates from 60 countries)

**International Symposium on Dendritic Cells**

(1,000 delegates from 50 countries)

**International Biotechnology Symposium**

(2,100 delegates from 53 countries)



2011

**2011 Asia-Pacific Symposium on Cochlear Implants and Related Science**

(1,010 delegates from 36 countries)

**2011 IAAF World Athletics Championship**

(7,000 delegates from 212 countries)



2010

**2010 World Firefighters Games**

(5,200 delegates from 49 countries)



2007

**IEEE International Conference on Embedded Software and Systems 2007**

(400 delegates from 10 countries)

2006

**IEEE Sensors 2006**

(650 delegates from 35 countries)



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**APORS 2021,  
Daegu, Korea**

# Conference Overview

- **Dates** 2021. 6. 24(Wed) ~ 6. 26(Fri)
- **Location** Hotel Inter-Burgo Daegu
- Anticipated Attendance of **500 participants**

## Program

	June 24 Day 1	June 25 Day 2	June 26 Day 3	June 27 Day 4
Morning	Registration	Parallel Session	Parallel Session	Parallel Session
	Opening Ceremony	Parallel Sessions	Excursion	Closing Ceremony
Afternoon	Lunch	Lunch		
	Parallel Sessions	Keynote Session		
Evening	APORS Council Meeting	Welcome Reception	Conference Dinner	



# Conference Theme

The program committee of the 2021 Conference on "Developing Sustainable Values through OR: Business and Economic Partnerships" warmly invites you to come to Daegu, South Korea where the event will be hosted, offering a great opportunity to meet renowned scholars and practitioners in the field. In recent decades, Daegu has become an important global marketplace and a major hub of culture, economics and tourism in Korea. It is a place where peoples of various backgrounds converge to learn and live harmoniously.

## Conference Streams

- Algorithm and Computational Design
- Analytic Hierarchy/Network Processes
- Artificial Intelligence and Big Data
- Bi-level Optimization, Numerical Optimization
- Airline, Hotel and Service Optimizations
- Combinatorial Optimizations, Computational Biology, Bioinformatics and Medicine
- Computational Statistics, Data Mining and Decision Making
- Constraint Programming, Multi-Criteria Decision Analysis
- Cutting and Packing, DEA and Performance Measurement
- Disaster Management and Humanitarian Problems
- Discrete and Global Optimization, Integer Programming, Mathematical Programming
- Energy, Environment and Climate, Engineering Optimizations
- Financial Modeling and Optimization, Fuzzy Optimizations
- Game Theory, Heuristics and Metaheuristics
- Health Care Management and Applications
- Machine Learning and its Applications
- Military, Defense and Security Applications
- Modeling, Simulation, Network Optimization
- Optimal Control, Facility Logistics
- OR/MS: Beyond Mathematics
- OR and Development
- OR and Education
- OR and Entrepreneurship
- OR and Social Innovation
- Project Management and Scheduling
- Production Planning and Management
- Quality Control and Management
- Revenue Management, Dynamic Pricing, Inventory Management
- Scheduling, Stochastic Programming, Vehicle Routing, Locational Analysis
- Supply Chain Management, Sustainability and Green Systems
- Systems, Networks and Applications
- Timetabling, Rostering, Transportation Planning

# Local Organizing Committee

## Chair: Lee, Chang Won

Professor Chang Won Lee teaches operations and service marketing at the Hanyang University School of Business. Professor Lee has taught various courses such as Business Statistics, Operations Management, Supply Chain Management, Healthcare Process and Management.



## Current Position

- Hanyang University Business School, Professor

## Professional Services

- APORS VP, 2015 -
- IFORS VP Representing APORS, 2016 -
- INFORMS Korea Chapter President, 2017 -
- IFORS Vice President elected for 2019-2021
- KORMS VP/Chief of Int'l Affairs, 2010
- Korea Healthcare Management Society, President, 2018
- Korea Productivity Association, President elected for 2019
- National Productivity Awards Review Committee, 2011 -

## Local Organizing Committee Members

Position	Name	Affiliation
Conference Chair	Lee, Chang Won	Professor, Hanyang University
Members	Ryu, Choonho	Professor, Department of Business Administration, Hongik University
	Yoon, Moon Gil	Professor, School of Business, Korea Aerospace University
	Kim, Soo Wook	Professor, Business School, Seoul National University
	Kim, Jong Woo	Professor, Business School, Hanyang University
	Ryoo, Hong Seo	Professor, School of Industrial Management Engineering, Korea University
	Ahn, Jae Hyeon	Professor, College of Business, KAIST



# 4

## Venue & Facilities





# Conference Venue

APORS 2021 will be held at the Hotel Inter-Burgo Daegu. The Hotel Inter-Burgo Daegu has been the site of various international meetings with the Daegu & Gyeongbuk areas. Also, it is very conveniently located near Daegu International Airport (10mins, 3.8km) and Dongdaegu KTX Station (10mins, 3.7km) giving APORS 2021 participants easy access to the venue.

The hotel has various halls which start from 60 seats to 1,800 seats. Various sessions can be held at once. All rooms are equipped with projectors, A/V System, and high-speed internet. There is enough space for refreshments in the foyer of each rooms. The hotel also offers VIP lounges, a Korean restaurant and premium buffet restaurants.

Room	Height (m)	Area(m <sup>2</sup> )	Size (by no. of seats)		
			Seminar	Theater	Banquet
Convention Hall	11	54 X 38.5	1,800	2,500	1,500
Joyful Hall	3.9	18.3 X 29	350	500	300
Happy Hall	4.2	14 X 26	200	300	160
Ladies Hall	3.6	9 X 18	60	60	60
Amante Hall	3.6	9 X 15	60	80	50

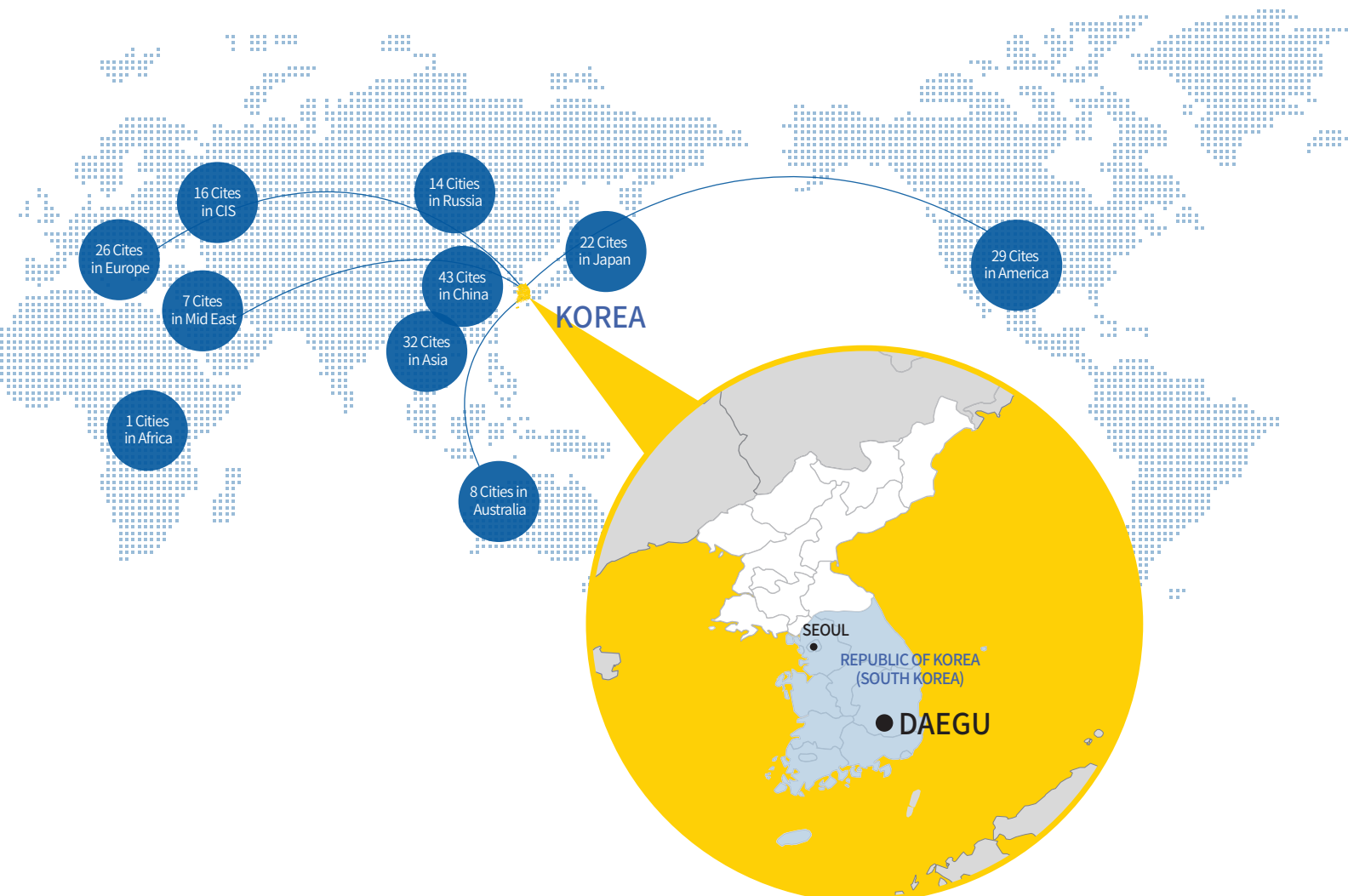




# International Air Access & Local Transportation

With the launching of the new world class Incheon International Airport in March 2001, Korea became a major transportation hub for East Asia, guaranteeing easier and more comfortable access than ever before to this dynamic region.

Daegu's location in southeastern Korea conveniently places it at the center of Northeast Asia. The city offers excellent transport links to the rest of Korea as well as internationally. The KTX high-speed rail connects Daegu to Seoul and Incheon International Airport, which has been consistently world's best airport by Airports Council International. Flights to other Asian destinations are also available from Daegu International Airport and Gimhae International Airport, which is about a one-hour bus ride from Daegu.










































# International Air Access & Local Transportation

## Incheon International Airport, the World's No. 1 Airport

Incheon International Airport is one of the world's largest and busiest airports, and for good reason. For ten consecutive years (2005–2014), it was rated the world's best Airports by Airport Council International. Eighty-seven major international carriers provide regular service between Incheon and 185 cities in 55 countries, with more than 5,400 passenger flights per week.

<Flights from 87 airline carriers / Flights to 185 cities in 55 countries (as of April 2017)>

	S7 Airlines		SAT Airlines		Emirates
	Garuda Indonesia		Shandong Airlines		Eva Air
	KLM Royal Dutch Airlines		Shanghai Airlines		Air Macau
	Northwest Airlines		Cebu Pacific Air		Air Astana
	Dalavia Far East Airways		Skymark Airlines		Air India
	Korean Air		SkyStar Airways Co.,Ltd		Air Canada
	Delta Air Lines		Shenzhen Airlines		Air France
	Lion Air		Singapore Airlines		Air Hong Kong
	Royal Khmer Airlines		Southern Air		Orient Thai Airlines
	Lufthansa Airlines		Avial NV		Uzbekistan Airways
	Malaysia Airlines		Asiana Airlines		Far Eastern Air Transport
	Mongolian Airlines		Asian Spirit		United Airlines
	Vietnam Airlines		Aeroflot-Russian Int'l		Altyn
	Vladivostok Airlines		Atlas Air		Sichuan Airlines
	UNI Airways Corp		Turkish Airlines		China Eastern Airlines
	UPS		Tradewinds Airlines		Xiamen Airlines
	Iran Air		FedEx Express		CHINA POSTAL AIRLINES
	El Al Israel Airlines		Polar Air Cargo		China Hainan Airlines
	East Line Airlines		Phuket Airlines		China Airlines
	Japan Airlines		PMT Air		Galaxy Airways
	Nippon Cargo Airlines		Philippine Airlines		Qatar Airways
	GreatWall Airlines		Kalitta Air		Thai Sky Airlines
	All Nippon Airways		Cathay Pacific Airways		Thai Airways
	Gemini Air Cargo		Krasnoyarsk Airlines		Air China
	Jade Cargo International		Krylo Airlines		China Southern Airlines
	Lao Airlines		Royal Air Maroc		Mandarin Airlines
	Hawaiian Airlines		VIETJET AIR		SOLASEED AIR
	Sky Angkor Air		Scoot Airlines		Silk Way West Airlines
	SEAIR		American Airlines		Alitalia

# International Air Access & Local Transportation

## Daegu International Airport, Connecting East Asia

Daegu International Airport is only 10 minutes away from the Hotel Inter-Burgo Daegu, the proposed venue for APORS 2021, and located nearby Dongchon Recreation Park, where APORS 2021 participants can experience nightlife and Korean recreation culture. Daegu International Airport is connected to 15 cities and 8 countries including Beijing, Qingdao, Shenyang, Changsha, and Hong Kong in China; Bangkok in Thailand; and Manila in the Philippines.

## Gimhae International Airport, Connecting 40 Cities in 12 Countries

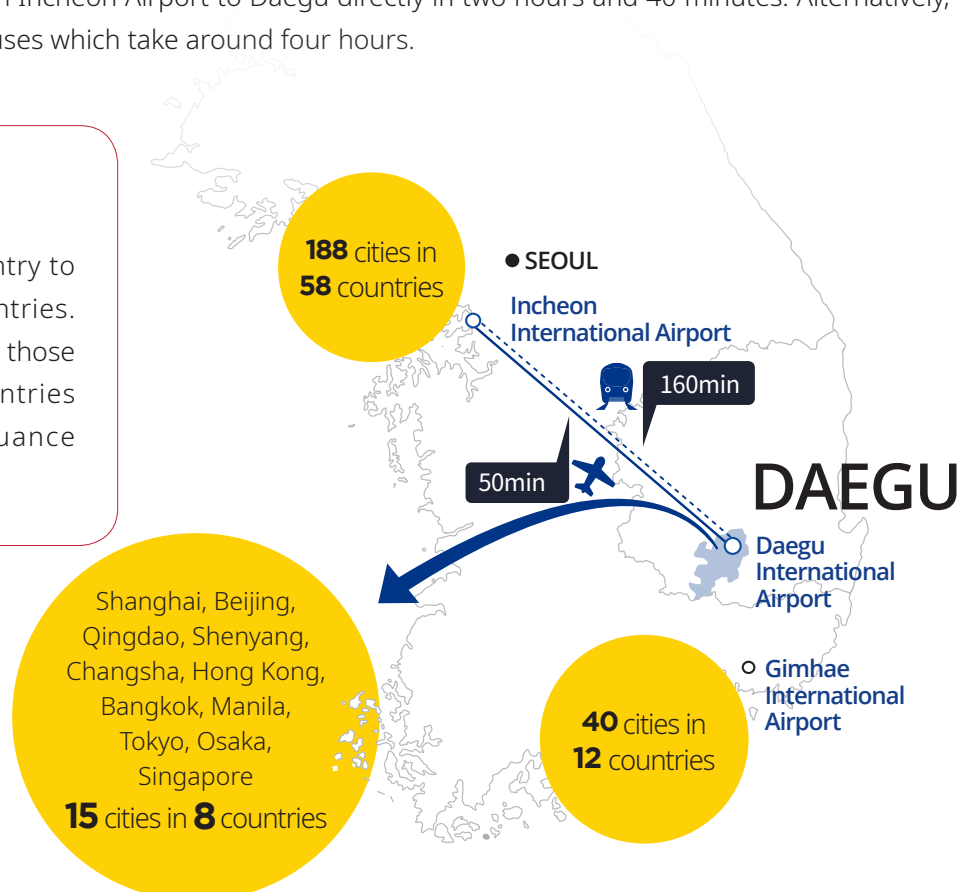
Gimhae International Airport is approximately 50 minutes from Daegu by airport limousine bus. The airport offers flights to 40 cities in 12 countries including China, Japan and those in Southeast Asia.

## Domestic Flights and Other Transportation to Daegu

A flight to Daegu from Incheon International Airport takes 50 minutes and Korea's high-speed train, the KTX, can get passengers from Incheon Airport to Daegu directly in two hours and 40 minutes. Alternatively, there are luxury limousine buses which take around four hours.

### Visa-Free Entry

Korea offers visa-free entry to nationals from 115 countries. We will offer assistance to those coming from other countries for expediting visa issuance process as well.





# International Air Access & Local Transportation

In regards to local public transit, Daegu has 1,719 city buses serving 98 routes, 17,051 taxis operating all over the city, and two subway lines and a monorail.

Daegu, ranked as having the fastest traffic flow among the major cities in Korea, is actively developing ever-more-convenient modes and systems of public transportation as well as furnishing higher-quality traffic related services.

## Dongdaegu Train Station (Dongdaegu Transit Complex)

The station directly connects Incheon International Airport with major Korean cities and welcomes the second highest number of passengers in Korea after Seoul Station. Passengers can utilize the subway or buses to reach places within the city.

## Major cities to Daegu

- Incheon Intl Airport to Daegu: 50USD(2h 30min)
- Seoul to Daegu: 39USD(1h 40min)
- Daejeon to Daegu: 18USD(40min)
- Busan to Daegu: 15USD(50min)

Having hosted very large events in excess of 45,000 participants (2015 World Water Forum), Daegu has the experience and the logistics in place to move delegates smoothly, safely, comfortably and punctually to where they need to be.



# High Quality, Affordable Accommodations

Daegu offers a wide choice of accommodations from budget to deluxe hotels for APORS 2021 participants. Thirty-eight hotels with a total of 10,000 rooms are available throughout Daegu.

Class	Name	Rooms	Room rate (USD)	Distance from Venue (Min)
5 Stars	Marriott Hotel	322	190~200	10
	Hotel Inter-Burgo EXCO	303	125~135	10
	Hotel Inter-Burgo Daegu	322	125~155	20
Sub Total		947		
4 Stars	The Grand Hotel Daegu	250	130~150	20
	Novotel Ambassador Daegu	204	90~246	20
	Novotel Suite Ambassador Susung	150	78~87	20
Sub Total		604		
3 Stars	Hotel the Palace	52	79~118	20
	New Daegu Hotel	51	67~77	25
	Toyoko Inn Hotel Daegu	203	64~73	10
Sub Total		306		
Budget	Greenstels	5,558	40~70	Walking Distance(3min.)
	Guest House	255	20~60	7~15
	Korean Traditional House	105	30~100	7~15
	University Dorms	1,143	10~50	Walking Distance (5min)
Sub Total		7,061		
Total		8,918		

# High Quality, Affordable Accommodations

## Hotel Inter-Burgo Daegu

Conference venue the Hotel Inter-Burgo Daegu offers 322 guestrooms able to accommodate most APORS participants for the event's four-days. The hotel's convenient location near the Geumho River and Dongchon Recreation Area as well as Daegu International Airport and the Dongdaegu Transit Center Complex will afford guests plenty of opportunities for entertainment, sample the local foods and easy travel.



## Budget Accommodations

Daegu fully realizes the need to offer affordable accommodations for young researchers and students. Budget accommodations are conveniently located downtown and easily accessible from the Hotel Inter-Burgo by public transportation. Prices range from USD 20 to 70 per night. University dorm prices range from USD 10 to 50 which is competitive with those of other countries.



## Hanok Stay (Traditional Korean Housing)

A unique accommodation option for participants is hanok stay. Hanok refers to traditional Korean homes that date back hundreds of years, and their beauty lies with their harmonization with the surrounding environment. These are popular with those interested in getting a glimpse of the traditional Korean lifestyle. Rates range from USD 30 to 100 per night.



# Expected Weather Conditions

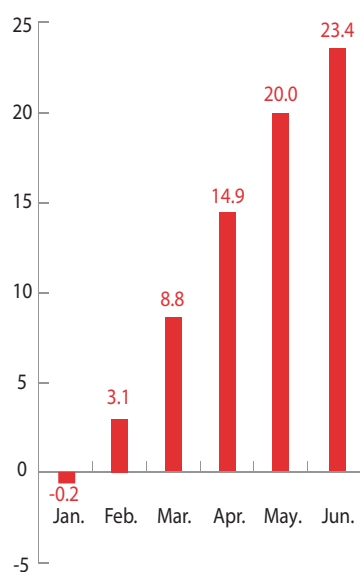
## Daegu in June

Korea's weather is characterized by 4 distinct seasons: spring, summer, fall, and winter.

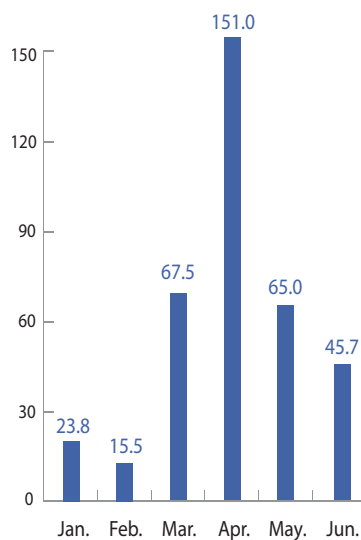
It will be the beginning of the summer season in June during APORS 2021. June in Daegu offers fine sunny days with green leaves of all kinds.

The average temperatures would be between 18°C(64°F) and 28°C(82°F) with exceptional possible peaks as low as 13°C(55.4°F) and as high 36°C.(96.8°F).

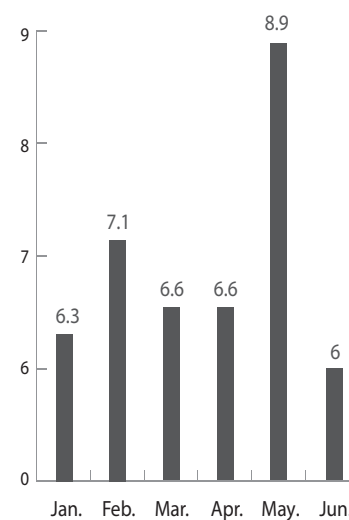
Average annual temperatures (°C)



Average amount of precipitation (mm)



Daily hours of sunlight. Monthly average(hour)



# Social Program

We believe that the final ingredient for a successful conference is social and special events to entertain and excite delegates while fostering promising networking opportunities. Daegu has an outstanding array of versatile venues to cater for the conference: the Daegu Culture and Art Center, Confucian Study Village in Keimyung University, Daegu 83 Tower, and Daegu Art Factory among others. The Daegu Hyanggyo Confucian Academy, which was originally responsible for traditional education, is the city's most popular special venue for social events. These will allow participants to enjoy themselves as well as give them opportunities to be exposed to Korean culture.



Welcome reception, Daegu Hyanggyo



Daegu 83 Tower conference dinner venue

## Welcome Reception

All participants of APORS 2021 are invited to the welcome reception, which will showcase our excitement at welcoming delegates from all over the world, especially the Asia Pacific regions. This is also a prime opportunity to experience performances of traditional Korean culture.

## Conference Dinner

A conference dinner at a unique venue will offer opportunities to mingle with colleagues in enjoyable surroundings. Participants can celebrate the conference with an exquisite dinner and special performances that will leave a lasting impression of APORS 2021 in Korea.



# Excursion (Technical Tour)

## Daegu Samsung Creative Campus

Daegu Samsung Creative Economy Complex is being built on the old site of Cheil Industries in 2016. There are four areas: The Creative Economy Zone, the Samsung Zone, the Atelier Zone and the Community Zone. Especially in the Samsung Zone, the original building of Samsung Sanghoe, the most crucial part of the company's history, was restored as a Samsung Museum.



## Gumi Electronic Industrial Complex

Gumi Electronic Industrial Complex is a hub of IT and electronics with more than 1,800 domestic and multinational companies including Samsung, LG, Exxon Mobil, Asahi Glass, and Toray Saehan. ISCAS 2021 participants will be able to visit leading IT and electronics companies.



## Hyundai Motors

As Hyundai Motor's main production facility, the Ulsan Plant is comprised of five Independent Complete Car Plant, Engines and Transmission Plant and Road Driving/Crash Test Site and Cultural Center. The plant is the world's largest single automobile plant and employs over 34,000 personnel to produce an average of 5,400 vehicles a day. The plant has its own port, where up to three 50,000-ton vessels can anchor simultaneously. It has its own fire station, hospital, and patrol cars, all within the compound.

Hyundai Motors Ulsan Plant tour offers a great opportunity for visitors to experience the manufacturing process of Hyundai Motors, which is emerging as a global car brand.



Ulsan Hyundai Motors



# Tourist Attractions

## Palgongsan Mountain & Dongwhasa Temple

It could be said that in Korea, a country that is 70% mountains, the most popular outdoor pastime is hiking. Luckily, Daegu is surrounded on all sides by mountains ready to be summited. Among these is the towering Palgongsan Mountain, located 20km northeast of Daegu, which overlooks the distant urban landscape. Possessing three breathtaking peaks (which can be reached via gondola lift for those less exercise-inclined), Palgongsan has been long-admired throughout the centuries, featuring dense forests, blooming azaleas in the spring, and plentiful valleys that are waiting to be explored. Culturally, the area is significant for its Buddhist culture - most notably for Donghwasan Temple and the Gatbawi Buddha, resting at the top of nearby Gwanbong Peak.

### Stone Seated Buddha at Gwanbong Peak in Palgongsan Mountain, Gyeongsan (Treasure No. 431)

This stone seated buddha, better known as "Gatbawi" (lit. "Stone Hat"), dates back to the Unified Silla Kingdom (668-935). About 4 meters tall, the Buddha wears a hat made of a 15cm-thick flat stone. A widespread folk tale states that this Buddha will hear at least one prayer from each guest, and therefore, petitioners begin lining up from daybreak..







## Tourist Attractions

### Seomun Market & Seomun Night Market

Seomun (lit. "West Gate") Market has a long history as Daegu's most important market. During the Joseon Dynasty (1392-1910), it was one of Korea's three main markets. Today, Seomun Market still offers an open-air market atmosphere. In the daytime, almost everything can be bought here, from food and clothing to leather goods, although its most famous products are textiles, clothes, accessories, ceremonial products, and traditional Korean goods. In the evening, there is a night market that opens from 5pm until 12am, where you can enjoy tasty Korean street food for less than five dollars.





## Tourist Attractions

### **Yaknyeongsi (Daegu Herb Medicine Market)**

For a rich selection of ginseng and herbal medicines, visit Yangnyeongsi in downtown Daegu. The first medicine wholesale market in Korea, Yangnyeongsi has about 50 herbal medicine stores, 25 herbal clinics, 85 herbal doctors, 20 insam (ginseng) stores. Here you can find all types of Oriental medicine, herbs, elixirs, and potions to cure almost any ailment.





# Tourist Attractions

## City Alley Tour: Tracing Korean History's Footsteps

Through a tour of Daegu's many alleyways, participants can hear stories and lessons about Daegu's many contributions to Korean independence and democracy, as well as how the city has evolved during the 20th century into a cultural hub. Tour stops include local churches, old houses of important historical figures, sites of the March 1st Independence Movement, the Museum of Oriental Medicine, and more.





# UNESCO Cultural Heritage

## Silla Spotlight

The Silla Kingdom (57 BCE-935 CE) began as a small statelet just outside of modern-day Daegu. Over the centuries, Silla grew in power, gaining territory across the Gyeongbuk region and securing its position as an East Asian maritime powerhouse, facilitating economic trade and cultural exchange not only with the competing Korean kingdoms of Goguryeo and Baekje, but also between China and Japan. In the 7th century, it overtook the two other kingdoms and became the first state to unify the Korean peninsula. Silla is known for its Buddhist architecture and art, royal tombs, “bone-rank” class system, scientific achievements, and for having the only female rulers of Korea until the 21st century.

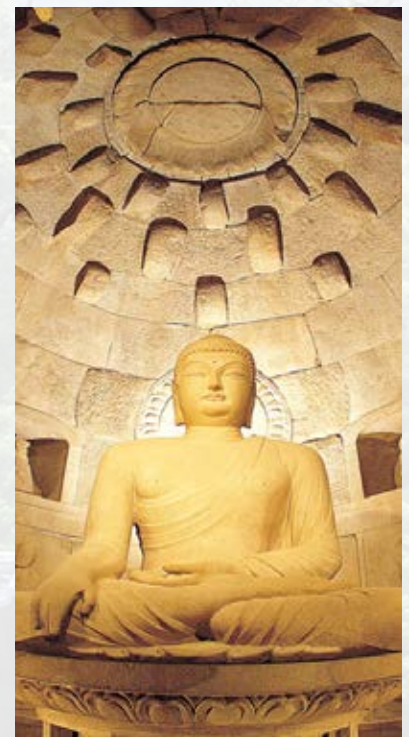
### Gyeongju Historical Areas

Gyeongju, located an hour from Daegu, was the capital of Silla for the entirety of its nearly millennium-long history. The city itself is an open-air museum of the Silla period, with royal tombs, mountain fortresses, ponds, Buddhist rock carvings, pagodas, ruins of former temples and palaces, and even the oldest extant astronomical observatory in Asia and possibly the world. Participants can also visit the Gyeongju National Museum, where they can see more outstanding examples of Buddhist and royal art and artifacts.

### Seokguram Grotto and Bulguksa Temple (Gyeongju)

Located atop a mountain with stunning views of the East Sea in the distance, Seokguram Grotto is considered the greatest masterpiece of Silla's golden age. Built in the 8th century, the grotto and its mesmerizing seated stone Buddha are an embodiment of the architecture, mathematical principles, geometry, religion, and art of the period.

Seokguram Grotto is a part of the larger Bulguksa Temple complex. Its wooden structures were reconstructed and expanded various times from the 8th to 19th centuries, but were ultimately in ruin at beginning of the 20th century. Bulguksa has since been carefully restored to showcase its original Silla-period stone pagodas, stone bridge stairway, stone stupa, and two bronze statues of the Buddha, which are all masterpieces of Buddhist art. Visitors can also experience the distinct architectural layout of Silla-period Buddhist temples, which has been preserved until today.





# UNESCO Cultural Heritage

## Goryeo Spotlight

The Goryeo Dynasty (918-1392), where modern-day “Korea” gets its name, was founded during the decline of Silla. Goryeo was characterized by its mix of Confucian-style governance and Buddhist religion, its celadon (coveted across East Asia), its military regime, and also for the repeated attacks it suffered by peoples such as the Khitans, Jurchens, and Mongols. In the face of these continued external threats, the royal family and common people turned to the Buddha for assistance.

### Tripitaka Koreana at Haeinsa Temple (Hapcheon)

In 993, and again in 1010, the Khitans attacked Goryeo. In an attempt to win good fortune by invoking the Buddha, a massive Buddhist text woodblock carving project was ordered by the royal family. Over the course of 76 years, the first Tripitaka Koreana (complete collection of Buddhist scriptures and other texts) was completed in 6,000 volumes. However, these were destroyed some 140 years later by none other than the Mongols when they invaded in 1232. Again, the Goryeo king ordered a new version of the Tripitaka Koreana to be made in an appeal to the Buddha, though this time it took a mere 12 years to complete the collection of 81,258 woodblocks.

This second version was moved to Haeinsa Temple in 1398, where it has remained until today. Haeinsa Temple, located an hour from Daegu, is nestled in the mountains of Gayasan National Park. Established in 802, Haeinsa is not only a great place to learn about traditional printing and archival preservation techniques, but is also home to numerous other treasures in and among its 90-plus buildings.





# UNESCO Cultural Heritage

## Joseon Spotlight

The Joseon Dynasty (1392-1910), the last royal dynasty in Korean history, was a stronghold of Neo-Confucian governance, scholarship, ritual, and culture. Its capital, Hanyang, later grew into the city we know today as Seoul. Neo-Confucian ideology shaped almost every part of society, from the royal family and aristocrats on down. Yet, at the same time, folk music and dance also thrived as a means for commoners to express themselves in the restrictive Joseon society. The influence of the over 500-year-long dynasty can be seen today in the “intangible” modern Korean society, and also in the many “tangible” artifacts and architectural structures preserved from the period.

### Historical Villages of Korea: Hahoe and Yangdong (Andong)

Two of the most representative and well-preserved historical villages of Korea are Hahoe and Yangdong. Located an hour and a half from Daegu, these villages were founded between the 14th and 15th centuries. Their architectural styles and layout faithfully reflect the Confucian tradition of the period. Here, visitors can learn about how a Neo-Confucian society approached what we might today call “urban planning” and “space design,” while also keenly considering how to best harmonize with the local, natural landscape.

Andong, the city in which the villages are located, was a thriving hub of Confucian scholarship throughout the Joseon Dynasty, and is home to two of the most famous traditional Confucian academies in all of Korea. Visitors can also experience many folk traditions passed down over the centuries in Andong and its historic villages, most notably the area’s mask dance.





# Festivals in June, Daegu

Located at the center of Korea's Three Kingdoms (Goguryeo, Baekje and Silla), the city of Daegu and surrounding areas possess a rich history and an abundance of cultural heritage sites. Furthermore, Daegu holds many annual festivals that are diverse and display its rich heritage, as the Daegu International Musical Festival(DIMF), Bangcheon Alley Opera Festival, Daegu Food Tour Expo and more to explore in June.



## Bangcheon Alley Opera Festival

The Bangcheon Alley Opera Festival aims to enjoy opera in a whole new way. The festival is run entirely by residents of the Bangcheon district in order to promote their local culture. Instead of a regular opera stage, the opera is performed throughout the entire market, itself a popular attraction among Koreans for its artistic murals of Korean singer Kim Kwang Seok.



## Daegu International Musical Festival (DIMF)

First held in 2006, the Daegu International Musical Festival (DIMF) is the largest summer musical festival in the world. DIMF aims to showcase international and domestic musical productions to audiences from around the world at very affordable prices.



## Daegu Food Tour Expo

The Daegu Food Tour Expo is an event in which participants can enjoy Korean-style food. Here, they can sample Korean dishes of all kinds and even try making their own.

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## Budget



# Government Financial Support

Government-level entities already supporting the conference include the Korea Tourism Organization and Daegu Metropolitan City, which have pledged a combined total of over \$27,800 USD.



## Support for Participants

- 30-50% discounted rates for accommodations
- 30% discounted fare for the Korea Train Express (KTX) service
- Free City and Technical Tours
- Free UNESCO World Heritage Tour
- Daegu Welcome Desk & Welcome Kit Service during the APORS 2021

### Free Cultural and Technical Tours

For the convenience of participants, Daegu CVB will offer a free city and UNESCO World Heritage tour and Technical Tour Service.

### Discounts for KTX Ticket & Hotel Accommodation

Daegu CVB provides a 30% discount for KTX (Korea Train Express) tickets and 30-50% of regular hotel rates for the convenience of foreign participants using an online booking system.

### Welcome Desk and Welcome Kits for Participants

Welcome desk staff will provide all kinds of information about the city of Daegu.

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## Letter of Support

## Daegu Metropolitan City

The City of Daegu  
700-714, 88 Gongpyeongno, Jung-gu, Daegu, Korea  
Tel. 82-53-803-2001 Fax. 82-53-803-2009



June 19, 2018

Dear APORS Executive Committee Members,

On behalf of Daegu and our 2.5 million citizens, it is my pleasure to write this letter in support of the candidacy of the Republic of Korea and Daegu Metropolitan City for hosting the APORS Triennial Conference 2021.

Daegu, where the conference would be held, has long been a center of technology, education and global convention in Korea. These factors will surely bring positive result to hosting APORS Triennial Conference 2021.

Based on the traditional manufacturing industry, Daegu is actively fostering future car industry, IoT-based medical industry as the future growth engine. The city is well equipped of research and production of IT convergence industrial technology, robotics, future cars and even computer softwares with the combination of R&D institution and the small manufacture companies in and around the city. By hosting APORS 2021, Daegu will inform the world about Daegu's well-equipped technology and exchange the knowledge with Operational Research scholars to make use of the technology.

In this regard, hosting the APORS Triennial Conference 2021 will give us an opportunity to share ideas of technological knowledge around the city and make use of it with evolving Operational Research field. Also several contributors of Operational Research are working in universities and institutions in this region, thus we would like to provide active and fruitful support for them.

With our careful balance of having technology and knowledge, the delegates visiting Daegu will truly discover the beauty of Korea. Moreover, we have proven records having hosted various high-profile events such as the 2011 IAAF World Championships in Athletics, the 2013 World Energy Congress, and the 2015 World Water Forum successfully. Not only that, there is 2021 World Gas Conference, 2024 World Biomaterials Congress is coming up to be hosted in Daegu.

I believe that Daegu would be the wonderful host for the APORS Triennial Conference in 2021 and I, therefore, would like to ask for your kind consideration and support for the city, Daegu. I assure you that the city government will spare no efforts to make it the most successful and enjoyable event ever.

Sincerely yours,

Kwon Youngjin  
Mayor, Daegu Metropolitan City, Korea



## Korea Tourism Organization



June 19, 2018

Dear APORS Executive Committee Members,

On behalf of the Korea Tourism Organization (KTO), it is a great honor that Korea is being considered for the opportunity to host the 2021 Conference of the Association of Asian-Pacific Operational Research Societies within IFORS in Daegu, Korea.

Korea is a technologically advanced country with a world class infrastructure that attracts over 17 million visitors a year. It is a dependably safe and accommodating destination for foreigners and has a proven track record in hosting numerous international conventions and meetings throughout the country. Korea has welcomed world leaders as well as academics and businessmen who visit by the thousands for each event. Rest assured that we will deliver quality, comfort, efficiency, and fun in all the activities you seek to accomplish in your congress.

Daegu has vast experiences in successfully hosting diverse international meetings. This includes the APEC Small and Medium Enterprise Ministerial Meeting in 2005, the IAAF World Athletic Championship in 2011, the World Energy Congress in 2013 and the World Water Forum in 2015.

We sincerely hope that the 2021 Conference of the Association of Asian-Pacific Operational Research Societies within IFORS will be held in Daegu, Korea. Given the opportunity, we would be honored to contribute to the success of 2021 Conference of the Association of Asian-Pacific Operational Research Societies within IFORS.

With our experience, organizational capacity and cultural appeal, we are confident that the attendees will have a memorable experience.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Young Bae, Ahn".

Young Bae, Ahn  
President of the Korea Tourism Organization