



The 29th SOMP Annual Meeting and Conference on Mines of the Future (SOMP 2018)

Tentative Program and Guide

(Subject to change and final hard copy to be available in your registration package)

New World Beijing Hotel, Beijing, China

July 3 - 6, 2018

Co-Hosted by



Third Circular

Introduction by the President of SOMP



Professor LI Zhongxue
SOMP President
(2017-2018)

Dear SOMP Members and Colleagues,

With regards to the Society of Mining Professors / Societät der Bergbaukunde (SOMP), it can be said that the evidence clearly demonstrates continual successes in our Society's activities such as well attended annual conferences, proactively engaged regional meetings, ever increasing international collaborative initiatives, rapidly growing membership, significantly upgraded Members system functions, and strengthened promotion for members and programs capacity. This type of international activities, events and progresses of academics and professionals with their shared interest in mining / minerals engineering education and research has been a *raison d'être* of SOMP. I am confident that the 29th SOMP Annual Meeting and Conference (SOMP 2018) will remain to contribute to the mission, vibrancy, and prosperity of SOMP.

With the year of 2018, we are at a moment when the world is under its new normal in transition toward global sustainability with a slowing down in globalization and a regional resurgence of nationalisms, and the discipline of mining / minerals engineering is impacted and challenged to re-engineer itself for its innovation and adaptation to such a circumstance. To address that question, an ambitious SOMP 2018 annual meeting and conference program has been designed on the theme - mines of the future and next generation of mining professionals in the light of collaborative opportunities and challenges with China's Belt and Road Initiative and Double First-Class Initiative. May I say that this 29th SOMP annual meeting and conference is unique in terms of its time and place and helps bridge the West and East, the developed and developing, and the continual improvement and radical growth.

I hope that researchers, teachers and professionals interested in mining / minerals engineering education and research, coming from all over the world are encouraged to visit Beijing to share the most relevant and current contributions that have emerged around our discipline and area of knowledge. The University of Science and Technology Beijing (USTB), China University of Mining and Technology Beijing (CUMTB), and North China Institute of Science and Technology (NCIST) have jointly supported us with their leadership and resources. The SOMP 2018 Chairman, Co-Chairmen, Organizing Committees, and the operating team of Secretariat are preparing all the details of SOMP 2018 with great care.

From this moment, I am ready to welcome SOMP members and all colleagues to share their concerns and professional aspirations. We want to create an authentic and inclusive teaching and learning communities among all professionals to make it easier to develop and build the capacity of our members, professionals, educational programs, and minerals sustainability.

With kind regards / Mit einem herzlichen Glückauf!

The Society of Mining Professors / Societät der Bergbaukunde

Welcome from the Chairman of SOMP 2018



Professor WU Aixiang
Chairman of SOMP 2018
Vice President of USTB

Dear SOMP 2018 Participants and Friends,

On behalf of the SOMP 2018 Organizing Committees, I am very pleased to invite you to actively take part in the 29th Society of Mining Professors / Societät der Bergbaukunde Annual Meeting and Conference on Mines of the Future to be held in Beijing, China from the 3rd through the 6th of July, 2018.

Under the auspices of the Ministry of Education, China, SOMP 2018 is co-hosted by the University of Science and Technology Beijing, China University of Mining and Technology (Beijing), and North China Institute of Science and Technology.

Following the success of past conferences held all over the world, we are sure that Beijing will be an exciting meeting place for all.

Beijing is the capital of China, noteworthy for its hybrid of tradition and modernity. The city is also remarked for its human richness, solidarity, openness, and varied cultural attractions.

The conference venue is in downtown Beijing, 1.1 km away from the Temple of Heaven, 1.2 km away from Wangfujing (best known shopping and food street for pedestrians only), and 2.5 km away from the Forbidden City with Palace Museum and Tian An Men, the Tiananmen Square, and the National Museum of China. Another impressive and monumental attraction is the Beijing Olympic Park where the National Stadium (Bird's Nest) and the National Aquatics Center (Water Cube) are located and the Games of the XXIX Olympiad were held.

You will be provided with a choice of tour to the Great Wall. Technical tours to a top coal caving longwall mine and a surface coal mine have also been arranged.

The technical program of SOMP 2018 has been envisioned as a shared platform of academic communication, discussion and learning. It brings us the latest advances and perspectives in our mining and minerals engineering research. Meanwhile, recent developments in education philosophy, methodology and tools brought by academics and professionals will also allow us to reflect the hottest issues in educating the next generation of mining / minerals professionals and academics. We will do this through the use of keynote speeches, paper presentations, panel or open discussions, and poster exhibitions which we invite you all to participate in.

We hope that our efforts invested in this diverse and rich agenda result in the achievement of our proposed goals. With that in mind, we have gathered the most prestigious mining, minerals and related professionals from Australia, Austria, Canada, China, Colombia, Egypt, Finland, Germany, Greece, Hungary, Indonesia, Italy, Japan, Namibia, Peru, Poland, Romania, Russia, Serbia, South Africa, Spain, Turkey, Ukraine, United States of America, and Vietnam.

We would like to thank you all in advance for your participation and contributions to SOMP 2018 and we are looking forward to meeting you in Beijing, July 2018.

The SOMP 2018 Organizing Committees

Organizing Committees

National steering committee

Aixiang WU, Chair, Professor and Vice President, University of Science and Technology Beijing
Jiachen WANG, Co-Chair, Professor and Vice President, China University of Mining and Technology Beijing
Qingxiang CAI, Co-Chair, Professor and Vice Chancellor, China University of Mining and Technology
Xueqiu HE, Co-Chair, SOMP member and Professor, University of Science and Technology Beijing
Ruixin ZHANG, Co-Chair, Professor and President, North China Institute of Science and Technology

GENG Qiannan, Deputy School Dean, University of Science and Technology Beijing

LI Cuiping, Professor, University of Science and Technology Beijing

LI Yang, Associate Professor and Associate Department Head, China University of Mining and Technology Beijing

LI Zhongxue, SOMP President and Professor, University of Science and Technology Beijing

SUN Enji, SOMP member and Research Scientist, China Academy of Safety Science and Technology

YIN Shenghua, Professor and Associate School Dean, University of Science and Technology Beijing

ZHAO Yiqing, Associate Professor and Associate Department Head, University of Science and Technology Beijing

International committee

AGIOUTANTIS Zach, Professor, University of Kentucky, USA

CARDU Marilena, Associate Professor, Politecnico di Torino, Italy

CEDRÓN Mario, Professor, Catholic University of Peru, Peru

CLAUSEN Elisabeth, Professor, RWTH Aachen University, Germany

HEBBLEWHITE Bruce, Professor, University of New South Wales, Australia

KECOJEVIC Vladislav, Professor, West Virginia University, USA

KRETSCHMANN Jürgen, Professor and President, TH Georg Agricola, Germany

LI Zhongxue, Professor, University of Science and Technology Beijing, China

MEECHUMNA Pinyo, Professor, Chulalongkorn University, Thailand

MITRA Rudrajit, Associate Professor, University of the Witwatersrand, South Africa

MUSIYARIRA Harmony, Associate Professor, Technical University of Namibia, Namibia

RESTREPO BAENA Oscar Jaime, Professor, Universidad Nacional de Colombia, Colombia

SARVER Emily, Associate Professor, Virginia Polytechnic Institute and State University, USA

SAYDAM Serkan, Professor, University of New South Wales, Australia

Conference Secretariat

ZHAO Yiqing, Secretary-General

Jiajie LI, PhD, Deputy Secretary-General, University of Science and Technology Beijing

Zhixin ZHEN, Doctoral Candidate, University of Science and Technology Beijing

Congcong CHEN, Doctoral Candidate, University of Science and Technology Beijing

Dong GAO, Doctoral Candidate, University of Science and Technology Beijing

Conference Language

English

Conference Contact

Prof. Zhongxue LI, President of SOMP, mobile: +86 139 1076 1199, email: zxli@ustb.edu.cn

Dr. Jiajie LI, Deputy Secretary-General of SOMP 2018, mobile: +86 138 1075 7920, email: somp2018@ustb.edu.cn

Venue and Event Contact

New World Beijing Hotel

8 Qinian Street, Chongwenmen, Dongcheng District, Beijing 100062, China

<https://beijing.newworldhotels.com/en>

Events Manager: Ms. Zdanca YAN, phone: +86 10 5960 8888 ext 8976, mobile: +86 180 0138 8183

Emergency by Room Phone

Metropolitan Police: 9 110

Metropolitan Fire Service: 9 119

Metropolitan Ambulance: 9 120

Red Cross Ambulance: 9 999

Directory Assistance by Room Phone

9 114

Airport Transportation to / from Venue

Beijing Capital International Airport / BCIA (T3) is about 30 km away from the venue hotel.

The best way is by taxi and it takes 40-50 min one way under normal driving conditions during daytime. The fare is about CNY80-100 (equivalent to US\$13-16) also depending upon traffic conditions and 20% more during night from 23:00pm to 5:00am.

Subway line is available with one or two transfers and 5 to 10 min walking distance to the hotel. You may visit <http://en.bcia.com.cn> for more information.

Climate and Dress Code

Temperatures in Beijing in early July range from 20 degrees Celsius low at night to 32 degrees high during daytime. Meeting and conference rooms are mildly air-conditioned.

The recommended meeting and conference attire is business casual, or suits and ties for the men and dresses for the ladies.

Suits and ties or dresses are highly appreciated at the Awards dinner on July 5.

Tea, Café and Bar

Leisure tea, coffee and bar services are available at charge in the venue hotel.

YIN on 12 gets its name from the traditional Chinese chop, and gets its number from the rooftop perch on Level 12 that offers panoramic views of the capital from inside the bar and on the outside deck. The large amber-like chop and oversized calligraphy brushes at the entrance represent the ancient imperial signatures of kings - so expect to be treated royally when you step inside. With music spun by in-house DJs and soft rock played by local bands, YIN on 12 is a one-of-a-kind setting for sundowners, cocktails, and late-night early-morning drinks. Open from 5 p.m. to 2 a.m. daily.

TANG is located adjacently to the Hotel Lobby. It is said that the aroma of freshly brewed tea may be all the directions you need to find to TANG. The nine-meter high granite water feature will catch your attention and lead you to TANG too. TANG sources Chinese teas from the renowned tea provinces of China, Western teas from classic tea-producing regions, and fine wines and champagnes from around the world - so there's always something to celebrate here. Afternoon tea is served, there are snacks at all hours and cocktails in the evening. Open from 8 a.m. to 11 p.m. daily.

Currency

Hotel room and service charges can be paid in cash of the Chinese currency or by credit card of international brands, such as American Express, MasterCard, Visa, JCB or UnionPay.

Currency exchange service is available at the venue hotel reception desk with the exchange rate of the state-owned Industrial and Commercial Bank of China.

Late or Onsite Registration

Late or onsite registration is limited by availability, and onsite registration/tour fee payment, if any, must be **in cash of the Chinese currency only** (to the University of Science and Technology Beijing) at a late rate of CNY 5000, 3480, 1900, 280 for Great Wall tour, or 1580 for mines tour (equivalent to US\$ 790, 550, 300, 45 for Great Wall tour, or 250 for mines tour respectively), depending on your registration category as shown in the SOMP 2018 Circulars or Registration Form.

Hints and Tips

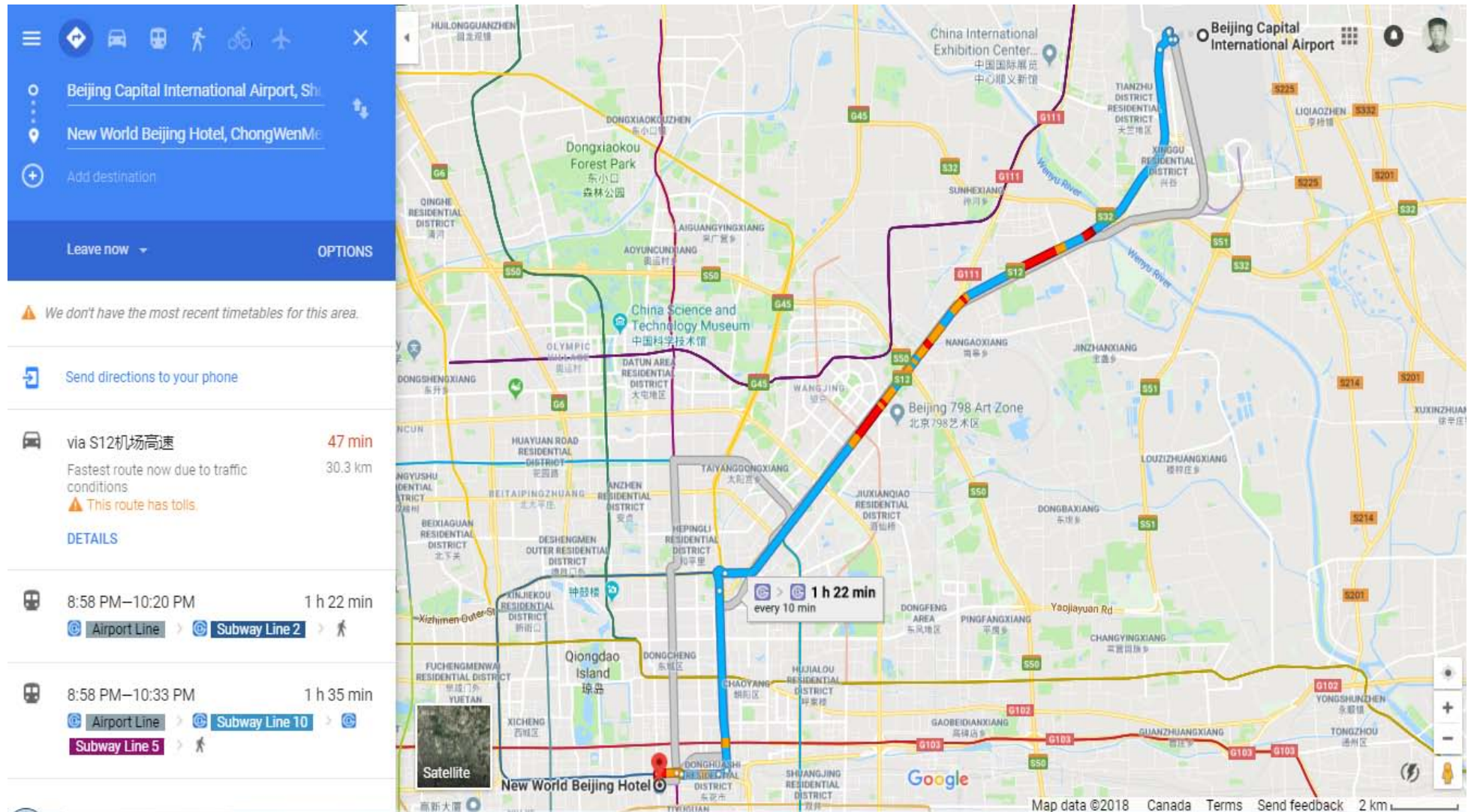
- (1) Be ready in advance or on time to chair your session, give your speech, present your paper or attend as audience.
- (2) Make sure that your cell phone won't ring or beep while in conference or dining rooms.
- (3) Put on your name badge/pass always while meeting and show it (with coupon when necessary) at dining room entrance to enjoy your meals.
- (4) You may pick up your certificate of attendance/paper presentation at the Registration and Help Desk on July 3 to 6.
- (5) Full fee registrants are reminded to have your e-copy of SOMP 2018 Proceedings in Open Assess and Browser/Server format on USB flash drive in your registration package.
- (6) The online edition of the SOMP 2018 Proceedings will be published as a special issue of the *International Journal of Georesources and Environment (IJGE)* in Open Access format at the URL address <https://ojs.library.dal.ca/IJGE/issue/archive>.
- (7) The venue hotel charges for car parking at CNY10.00/hour (equivalent to US\$2.00/hour).

Conference venue location in Beijing

第29届国际矿业教授学会学术年会地理位置图 SOMP 2018 Annual Meeting Venue Map



Transportation between Airport and Venue



Airport Express Railway and City Subway Lines

Technical Program (Tentative)

Day 1				Tuesday, July 3, 2018			
12:30-20:30	-	Registration and help desk		Hotel Lobby			
13:00-15:00	-	Council meeting		Board room on Level 2			
15:00-17:00	-	Education Committee meeting		Board room on Level 2			
	-	Research Committee meeting		Gallery 206 on Level 2			
	-	Members Development Committee meeting		Gallery 205 on Level 2			
	-	Capacity Building Committee meeting		Gallery 204 on Level 2			
19:00-21:00	-	Welcome reception (with name badge and coupon)		Terrace on Level 10			
Day 2				Wednesday, July 4, 2018			
07:30-08:30	-	Registration and help desk		Ballroom Foyer on Level 2			
Session	I	Opening, welcome and keynote speeches, chairing by Qingxiang Cai, Vice Chancellor of CUMT			Ballroom 1 on Level 2		
08:30-08:35	I-1	Opening introduction by President of SOMP					
08:35-08:40	I-2	Welcome speech by Chairman of SOMP 2018, Vice President of USTB					
08:40-09:05	I-3	Invited keynote speech - Hard rock mining research and education opportunities and challenges with China's BR and DFC initiatives by Aixiang Wu, Vice President of USTB					
09:05-09:30	I-4	Invited keynote speech -The digital mine of the future by Frederick Cawood					
09:30-09:55	I-5	Invited keynote speech - Coal mining research and education opportunities and challenges with China's BR and DFC initiatives by Jiachen Wang, Vice President of CUMTB					
09:55-10:25	-	Coffee / tea break and networking		Ballroom Foyer on Level 2			
Session	II	SOMP business session, chairing and leading by Bruce Hebblewhite			Ballroom 1 on Level 2		
10:25-12:00	-	SOMP Annual General Meeting					
12:00-13:15	-	Buffet lunch (with name badge and coupon)		Ballroom 2 on Level 2			
Session	III	Education I - Program reengineering and teaching innovations for the young generation of mining engineers, chairing by Rudra Mitra and Li Liu			Ballroom 1 on Level 2		
13:30-13:55	III-1	Keynote paper presentation - Challenges and opportunities of higher education for international mining engineers: Based on the practice at Chongqing University by Li Liu					
13:55-14:10	III-2	Keynote paper presentation - Curriculum review process at the School of Mining Engineering at the University of the Witwatersrand by Rudra Mitra					
14:10-14:25	III-3	Paper presentation - Earth resource management, a new graduate degree at the University of Utah by Michael Nelson					
14:25-14:40	III-4	Paper presentation - Zijin Mode: Industry and education deep integration in mining engineering education by Weiran Zuo					
14:40-14:55	III-5	Paper presentation - Using Virtual Reality to enhance mineral processing education by Seher Ata					
14:55-15:25	-	Coffee / tea break and networking		Ballroom Foyer on Level 2			

Session	IV	Education II - Panel speeches and open discussions, convening by Rudra Mitra	Ballroom 1 on Level 2
15:25-15:40	IV-1	Update on "Mines of the future - education" by Bruce Hebblewhite	
15:40-15:55	IV-2	Update on Education Committee - Future education program by R. Weber Youngman	
15:55-16:20	IV-3	Panel and open discussions - Future education (Panelists - Accepted abstract authors, et al)	
16:20-16:35	IV-4	Update on Education Committee - Sustainable practices by M Hitch	
16:35-17:05	IV-5	Panel and open discussions - Sustainable practices in mining (Panelists - Accepted abstract authors, et al)	
-	-	Free night: Shopping and eating at the best known and splendid pedestrian gala in Beijing	Wangfujing St, 1.2 km apart
Day 3 Thursday, July 5, 2018			
07:30-08:30	-	Registration and help desk	Ballroom Foyer on Level 2
Session	V	Education III - The Tim Shaw Award lecture by young professional and panel discussions, chairing and convening by Rudra Mitra	Ballroom 1 on Level 2
08:30-09:10	V-1	The Tim Shaw Award lecture	
09:10-10:00	V-2	Innovative teaching workshop: Tools & techniques - How best do students learn	
10:00-10:30	-	Coffee / tea break and networking	Ballroom Foyer on Level 2
Session	VI	R&D and industry I - Mineral resources, mine safety and health, community and sustainability, chairing by Serkan Saydam and Shuren Wang	Ballroom 1 on Level 2
10:30-10:55	VI-1	Invited keynote speech - Education, training, and collaborative opportunities in occupational health, work safety and emergency management by NCIST	
10:55-11:10	VI-2	Paper presentation - The Potentials of scientific and industrial collaborations in the field of REE through China's Belt and Road Initiative by George Barakos	
11:10-11:25	VI-3	Paper presentation - Safety: A business imperative by Kobus de Jager	
11:25-11:40	VI-4	Paper presentation - Social dimensions for successful development of mining projects – A focus on Artisanal and Small-scale Mining (ASM) by Oscar Jaime Restrepo Baena	
11:40-11:55	VI-5	Paper presentation - The highlights of the coal industry development aimed at achieving Sustainable Development Goals by O. I. Kazanin / M. L. Rudakov (TBD)	
12:00-13:15	-	Buffet lunch (with name badge and coupon)	Ballroom 2 on Level 2
Session	VII	R&D and industry II - Innovative and specialized topics, chairing by Serkan Saydam and Weiran Zuo	Ballroom 1 on Level 2
13:30-13:45	VII-1	Paper presentation - Simultaneous stochastic optimization of mining complexes / mineral value chains by Roussos Dimitrakopoulos	
13:45-14:00	VII-2	Paper presentation - Smart sensing for mineral exploration through to mine closure by S. Raval	
14:00-14:15	VII-3	Paper presentation - Hazards Detection System based on 3D Panorama for Tailings Dam in Mining by Enji Sun	
14:15-14:30	VII-4	Paper presentation - Mining of the Waterberg - A unique deposit requiring innovative solutions by Chabedi Kelello (TBD)	
14:30-14:45	VII-5	Paper presentation - Investigation of effects of nanobubbles on phosphate ore flotation by D. Tao	
14:45-15:00	VII-6	Paper presentation - Application of aeromagnetic, remote sensing and geological data in the delineation of the geological structures associated with the hot springs by T. Zvarivadza (TBD)	
15:00-15:30	-	Coffee / tea break and networking; Poster presentations and discussions by K. Hu, A Richins (TBD), F. Sengani (TBD), F. Wang, and Y. Wang	Ballroom Foyer on Level 2
Session	VIII	R&D and industry III - Panel speeches and open discussions, chairing and convening by Serkan Saydam	Ballroom 1 on Level 2
15:30-15:45	VIII-1	Panel speech - Successful industry-university research collaboration: A case study by S. Saydam	
15:45-16:00	VIII-2	Panel speech - A solution to grand challenges in mining: The International Research Alliance on Coal Mining by Ismet Canbulat	
16:00-17:00	VIII-3	Panel and open discussions - Industry-university collaboration and collaboration with emerging economies by I. Canbulat, E. Clausen, Dongsheng Zhang, et al with moderator S. Saydam	
19:00-22:00	-	Awards dinner (with name badge and coupon)	Ballroom 2 on Level 2

Day 4 Friday, July 6, 2018			
07:30-08:30	-	Registration and help desk	Ballroom Foyer on Level 2
Session	IX	Members development, chairing and convening by Elisabeth Clausen and Simit Raval	Ballroom 1 on Level 2
08:30-08:35	IX-1	Opening remarks by Elisabeth Clausen	
08:35-08:50	IX-2	Paper presentation - Changing the culture and attitude: Supporting women studying mining engineering by Andrea Brickey	
08:50-09:20	IX-3	Panel discussions - Perspectives on faculty diversity by Andrea Brickey, Jiajie Li, Simit Raval, et al with moderator Elisabeth Clausen	
09:20-09:40	IX-4	Open discussions - Searching for best practice: What's going on at your institution with facilitators Elisabeth Clausen and Simit Raval	
09:40-10:10	-	Coffee / tea break and networking	Ballroom Foyer on Level 2
Session	X	Capacity building, chairing and convening by Harmony Musiyarira	Ballroom 1 on Level 2
10:10-10:25	X-1	Keynote speech: Overview of capacity building initiatives from 2010 to date by David Laurence and Jürgen Kretschmann	
10:25-10:40	X-2	Paper presentation - Cooperative program for resources engineering between Kyushu University & Hokkaido University, JAPAN: International field exercise by Takashi Sasaoka (TBD)	
10:40-10:55	X-3	Paper presentation - Capacity building initiatives in minerals education in Southern Africa: Opportunities for collaboration by Harmony Musiyarira	
10:55-11:25	X-4	Open discussions - Capacity building initiatives and strategies through collaboration and reaching out by abstract authors, et al with facilitator Harmony Musiyarira	
11:25-11:45	X-5	Overview or preview of SOMP regional meetings in 2018 (5 min each)	
Session	XI	Closing - Secretary-General handover (8 min); welcome from Bochum (6 min); flag handover	
12:00-13:15	-	Farewell lunch (with name badge and coupon)	Yin Bar on Level 12
13:30-17:30	-	Tour to Tian An Men with group photo taking, and Palace Museum (with photo ID for security check to enter the Square, and for collecting your Museum ticket)	Starting off the hotel lobby

Accompanying Person Program

Day 1 Tuesday, July 3, 2018			
12:30-18:00	-	Registration and help desk	Hotel Lobby
19:00-21:00	-	Welcome reception (with name badge and coupon)	Terrace on Level 10
Day 2 Wednesday, July 4, 2018			
07:30-08:30	-	Registration and help desk	Ballroom Foyer on Level 2
09:30-16:00	-	Tour to Summer Palace with lunch	Starting off hotel lobby
-	-	Free night: Shopping and eating at the best known and splendid pedestrian gala in Beijing	Wangfujing St, 1.2 km apart
Day 3 Thursday, July 5, 2018			
07:30-08:30	-	Registration and help desk	Ballroom Foyer on Level 2
09:30-13:00	-	Tour to Temple of Heaven with lunch	Starting off the hotel lobby
19:00-22:00	-	Awards dinner (with name badge and coupon)	Ballroom 2 on Level 2
Day 4 Friday, July 6, 2018			
07:30-08:30	-	Registration and help desk	Ballroom Foyer on Level 2
12:00-13:15	-	Farewell lunch (with name badge and coupon)	Yin Bar on Level 12
13:30-17:30	-	Tour to Tian An Men with group photo taking, and Palace Museum (with photo ID for security check to enter the Square, and for collecting your Museum ticket)	Starting off the hotel lobby

Presentation in Poster

Several full papers have accepted for presentation in poster, and all authors with an accepted abstract are also encouraged to present their subject in poster.

Posters are free formatted but a poster should be one-sided (written on one side only) with its size or dimensions of 80 cm wide by up to 180 cm high. A maximum of one poster for each author is recommended, though a second poster can be accommodated on the other side or back side of the portable and vertically positioned poster holder.

The posters can be set up as early as afternoon on July 3 until morning on July 6, though poster discussions are particularly scheduled at the afternoon coffee / tea break time on Day 3, Thursday, July 5 when the poster authors should be attending for presentation.

An author who is prepared to present in poster should inform us in advance by not later than June 5 so that a poster holder will be provided and dedicated to your poster presentation.

Post-Conference Tours and Schedules

The arrangements for post-conference tours have been made.

July 7 will be allocated to the cultural tour to the Great Wall which is about 80 km away from the venue hotel. The tour takes a short day, starting off the venue hotel at 8:30 in the morning and ending at the venue hotel not later than 16:00 in the afternoon with normal traffic.

The technical tour includes both an underground coal mine with a top coal caving longwall system in the city of Datong in Shanxi province, and the Antaibao open pit coal mine in the city of Shuozhou also in Shanxi province which was originally operated by the American Occidental Petroleum. The tour takes two long days, starting off the venue hotel at 7:15 in the morning of July 8, lodging in Shuozhou for the night of July 8, and ending at the venue hotel in the late evening or night up to 21:00, July 9.