



International Society for Structural and Multidisciplinary Optimization

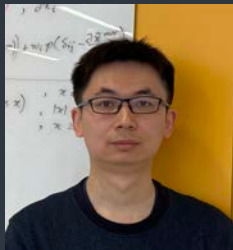
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ISSMO NEWSLETTER

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International Society for Structural and Multidisciplinary Optimization (ISSMO), since 1991.

<https://www.issmo.net/>

Message from the President, Dr. Qing Li



It was very pleased for many of us to meet in person during WCSMO-15 in Cork, a lovely Irish city, after almost three-year travel restriction due to Covid-19. I appreciate the wide participation to our first post-pandemic in-person meeting from all over the World even though many might have got used to online meetings these days. I believe that such face-to-face communication enables us to feel better engaged and more actively participated, reinstating a sense of close community we used to be. Here, I would like to greatly appreciate Dr Denis Kelliher, Dr Guangbo Hao, and the team for successfully delivering WCSMO-15 under various uncertainties in the course of organization.

The Cork WCSMO elected an energetic new executive committee (EC) for International Society for Structural and Multidisciplinary Optimization (ISSMO). Taking this chance, I would like to heartfully appreciate the past EC led by President Professor Wei Chen and Secretary Alicia Kim, as well as the retired EC members, Ming Zhou (Vice president), Gengdong Cheng (Past President), James Guest (Past Secretary), Ole Sigmund, Pierre Duysinx and

Erik Lund (Treasurer), for their outstanding leadership, dedicated service, and innovative ideas through various initiatives in such difficult time. As standing on a new Chapter, I am honored to deliver this Newsletter; and I wish it can play a role to better connect all the ISSMO members by updating the activities, communicating news, and promoting our society in a regular basis. Please allow me to thank Professors Ahmad Najafi and Hongyi Xu for their great effort in editing the ISSMO Newsletter.

ISSMO has a rich legacy of fostering excellence in research, education, and innovation. Since its establishment in 1991 by founding President George Rozvany, ISSMO has undergone noteworthy development and become a strong and influential international society with more than 1800 members over 50 countries/regions around the world. Over the past three decades, our researchers have made significant impacts on real world through their remarkable contributions to aerospace, automotive, civil, mechanical, materials, manufacturing, as well as many inter-/multi-disciplinary fields such as biomedical, environmental, multiphysical, chemical process etc. As we look ahead, research in structural and multidisciplinary optimization is seeing to take various new opportunities in emerging frontiers such as digital sciences, advanced manufacturing, robotics, nanotechnology, energy, and many more. We are embarking our journey of discovery and innovation to address some urgent global

issues through further enhancing efficiency of engineering products.

ISSMO conveys its mission to acknowledge and promote excellence in research, education, and engineering achievements. The ISSMO/Springer Prize and the ISSMO Haftka's Young Investigator Award are provided to the outstanding early career researchers for recognizing the quality WCSMO papers and groundbreaking works in the fields.

To broaden the participation, our women researchers' network has strongly supported the members and well received since WCSMO-12; and as a result, we can see that more female researchers are playing a key role in ISSMO nowadays. We are also paying a particular attention on attracting and engaging young researchers to the field. In WCSMO-15, we initiated a new mentorship and networking program, aiming to support and foster early career researchers in various stages of their career development. The mentorship-networking event attracted wide participation and excellent response. Taking this chance, I would like to particularly appreciate the initiators/organizers of these two visionary programs, Professors Shelly Zhang, Wei Chen, and Alicia Kim.

During the pandemic, our society has remained vigorous in different ways. I would like to particularly appreciate the colleagues from Technical University of Denmark (DTU) and TU Delft, who have successfully organized 26

TOP (topology optimization) Webinars via Zoom in the past three years and are archived in YouTube, which featured 120 invited speakers and attracted numerous participants globally, demonstrating its impact and engagement.

I would also like to take this chance to appreciate Professor Gengdong Cheng and Dr Ming Zhou, the Editors-in-Chief, as well as nearly 40 active Review Editors and many other editorial board members for maintaining the prestige and high standing of the official ISSMO journal, Structural and Multidisciplinary Optimization (SMO). SMO has become a central platform and primary journal for disseminating high quality scientific, educational and application articles in our field.

The strength of our society lies in the members. ISSMO EC encourages each of you and your associates/fellows to actively engage and contribute to the society in different ways. Your insights, expertise, and passion are invaluable for us to drive our primary mission forward. For more information on membership, events, and volunteer opportunities please visit our web site <https://www.issmo.net/> and feel free to communicate your ideas and suggestion with our EC members

<https://www.issmo.net/about/executive-committee/>.

Prepared by Qing Li

Professor in School of Aerospace, Mechanical and Mechatronics Engineering
The University of Sydney

WCSMO-15 Cork, Ireland, June 5th-9th, 2023

The 15th World Congress of Structural and Multidisciplinary Optimization (WCSMO-15) took place in the beautiful campus of University College Cork, Ireland over the period June 5th to June 9th. During the 4½ days, 489 delegates from 27 countries and regions attended 397 paper presentations and 39 poster presentations. There were 11 parallel sessions, with 7 or 8 seminars per session. This was the first in-person conference since the Covid-19 Pandemic and it was clear that all were delighted to be able to attend a physical conference again. Delegates travelled from over the world and from all five continents. The organisers were delighted that of the 489 delegates, 216 travelled from Asia and Australia, 75 from North and South America. Old acquaintances were renewed and, hopefully, new relationships were developed.

There was great attendance at the talks and the proximity of room locations made it very easy for delegates to move between sessions. In general, attendance was well distributed. There were a small number of popular talks: notably, Prof. Ole Sigmund from the Technical University of Denmark attracted over 250 delegates for his talk on “Microstructures with extremal stiffness, yield and buckling strength”.

The intimate nature of the event location and beautiful weather really added to fabulous delegate experience. Delegates made great use of UCC’s amphitheatre for social networking. This is located just outside Devere Hall where the lunches and coffee were served. The weather allowed coffee and lunch to be served a couple of times outside, which was certainly enjoyed by the delegates.

There were four SOTA talks that were very well attended. Professors Xiaojia Shelly Zhang, Samy Missoum, Lise Noël and Xueguan Song gave insightful presentations on the emerging trends in Optimization Research and Applications. The Keynote Address was given by Dr Erich Wehrle of Collins Aerospace on “Multi-Disciplinary Design Optimization and Design Space Exploration of Aerospace”. This sparked an interesting and lively discussion on

relationship between academic research and industrial application of optimization.

Following on from its success at WCSMO-14, there was a “Broadening Participation and Networking” event. This consisted of 12 roundtable discussions between younger researcher and leaders in the optimization field. It was held in the beautiful Aula Maxima of the 178-year-old original university that greatly enhanced the ambience. The roundtable discussions were followed by a stimulating discussion on broadening participation in the field of optimization. To everyone’s delight it was well oversubscribed, but quick work by the organising team meant that all the 130 people were able to participate. The organisers are very grateful to the senior academics and researchers that generously gave their time to this successful event.

On Wednesday afternoon there were a selection of social events for delegates. The trips to Irish Distillers with some whiskey tasting and Blarney Castle were particularly popular, and a great time was had by all. A group went to the picturesque town of Killarney to visit Liebherr Container Cranes, where some of the biggest container cranes in the world are designed and fabricated. On Thursday following a well-attended General Assembly, delegates were transported to Cork City’s premier sport’s stadium, Pairc Uí Chaoimh, for a night of exposure to Irish sports and music culture. During the drinks reception, a game of Hurling, indigenous to Ireland, was enjoyed by the delegates before they entered for the conference dinner and entertainment. Without doubt, the incredible traditional Irish musician Liam O’Connor, his band and dancers were the

pinnacle of the night. Three encores are testament to how much the audience enjoyed the night!

The Local Organizing Committee would like to thank all participants for their outstanding contributions to WCSMO-15, specifically their in-depth discussions of the technical talks. Our special thanks go also to the session chairs and the plenary, SOTA and Keynote speakers. The congress would not have happened only for the outstanding work done by Rebeka Evans and all her team from Abbey Conferencing and Events, so we thank them sincerely. We also would like to express our gratitude to the International Paper Committee and the ISSMO executive committee. We would like to thank the sponsors of WCSMO-15: Platinum level - Collins Aerospace & Altair and Silver level Dassault Systems. UCC staff were incredibly accommodating and we are very grateful to them.

Finally, I would like to thank the Local Organizing Committee for all their help and work. I’m particularly grateful to my colleague Dr Guangbo Hao for his huge contribution.

Prepared by Denis Kelliher,

Chair, Local Organizing Committee,
Senior Lecturer in Structural Engineering,
School of Engineering,
University College Cork, Ireland.
<https://wcsmo2023.com/>



ISSMO Broadening Participation and Networking Event

The ISSMO Broadening Participation and Networking event was held during the WCSMO-15 at Aula Maxima, Cork, Ireland. This event aimed to create a space to convene, network, and learn about issues related to broadening the participation of women, other underrepresented groups (e.g., regions with low representation), early-career researchers, and researchers from lesser-represented fields within ISSMO. By gathering both young and senior researchers, the event also aimed to foster the creation of mentoring relationships.

The 1-hour mentoring/networking event brought together 16 mentors and 130 participants around 11 tables. Each of these roundtables was assigned 1-2 mentors to guide the discussion. Breakout session discussion topics included increasing the participation of underrepresented groups (e.g., regions with low representation), developing strategies to broaden the reach of the ISSMO community (e.g., by engaging with researchers from other fields), sharing effective strategies to address work-life balance, and supporting early-career researchers' career development.

During the report-out session, each mentor shared highlights from their roundtable's unique discussion. These discussion points and ideas are summarized below:

Broadening participation

- Provide travel grants for students and lesser-represented groups;
- Organize ISSMO local chapters;
- Engage more industry contacts and participants;
- Organize hybrid session to promote participation;
- Hold roundtable discussions on technical topics during future conferences;
- Provide more mentorship for underrepresented regions/groups.

Broadening the reach of ISSMO

- Increase summer school or exchange programs;
- Increase regional conferences and regional representatives;
- Encourage more SMO papers from lesser-represented countries;
- Promote optimization to the general public, external advisors, and real-life engineering examples;
- Present keynote talks in a more innovative way;
- Develop panel session on trendy topics.

Work-life balance and career development

- Organize childcare;
- TOP webinar could extend to Ph.D. students led webinars;
- Share more job advertisements/notifications on the ISSMO website and email list;



- Award best posters;
- Award mentors.

This event would not have been successful without the valuable contributions of the mentors: Drs. G.K. Ananthasuresh, Wei Chen, Pierre Duysinx, James Guest, H. Alicia Kim, Qing Li, Erik Lund, Lise Noël, Yoojeong Noh, Julián Norato, Glaucio H. Paulino, Ole Sigmund, Emilio Carlos Nelli Silva, Daniel Tortorelli, Fengwen Wang, and Ming Zhou. We extend our special appreciation to these mentors for their time, dedication, and for sharing their wisdom and experiences with us all.

Prepared by

Shelly Zhang, David C. Crawford Assistant Professor, University of Illinois at Urbana-Champaign, USA.

Wei Chen, Wilson-Cook Professor in Engineering Design, Chair of Department of Mechanical Engineering, Northwestern University, USA.

H. Alicia Kim, Jacobs Scholar Chair Professor, University of California San Diego, USA.

Call for Proposal to Host WCSMO-16

Deadline: November 15, 2023

One of the aims of ISSMO is to bring together researchers and practitioners in the field of structural and multidisciplinary optimization, by means of international meetings having a high scientific standard.

Selection criteria include:

- ✓ up-to-date conference facilities,
- ✓ affordable costs to all members of the society (including registration, hotel, travel expenses, considering also free lunches, teas, banquet, excursions etc.),
- ✓ proven conference organizing experience and strength of the local organizing group,
- ✓ geographical diversity reflecting the distribution of SMO researchers over the world.

The last item is meant to imply a reasonably uniform distribution of congresses over three zones, namely Asia-Australia, Europe-Africa, and North & South Americas (see list of past locations at the bottom of this call).

The congress should be held within the mid-May 2025 – mid-June 2025 period and is expected to last between 4.5 and 5 days.

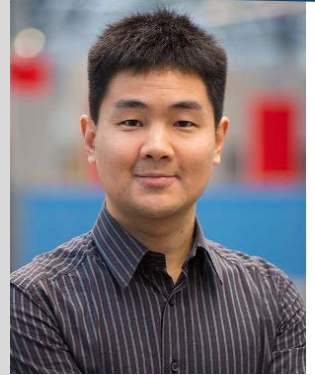
A detailed guideline for consideration is listed in our website [Call for Proposals to hold WCSMO-16 \(issmo.net\)](https://www.issmo.net). It is recommended that the proposal contains letters of endorsement from institutions, universities, and organizations that will support the proposers in organizing the Congress. Please send the proposals to Dr. Oded Amir, odedamir@technion.ac.il.

Meet the Winner of Haftka Young Investigator Award 2023

Professor Jun Wu

Delft University of Technology

“The award recognizes his outstanding research achievements and contributions in computational design optimization, including topology optimization across multiple scales and optimization considering manufacturing process planning. The award also recognizes his impactful service to the ISSMO community through creation of the informative and popular TOP Webinar Series that brings researchers around the world together to promote and discuss research.”



Q: Congratulations on receiving the prestigious 2023 ISSMO Haftka Young Investigator Award! Your remarkable accomplishments are truly inspiring. Could you provide us with an overview of your current research projects and the exciting work you are engaged in?

A: Thank you for your kind words. I am truly honored to receive the Haftka Young Investigator award this year.

My current research continues to focus on computational design and fabrication, and resolves around three main themes. The first one is what I call space-time topology optimization. Here we consider not only the structural layout (space) but also the fabrication sequence (time). The second theme is multi-scale topology optimization. In addition to developing new methods, I'm interested in validating results in industrial applications. Lastly, I'm exploring the theme of human-centered generative design. The goal is to create designs that not only meet functional requirements but also consider human aspects, such as aesthetics, for which there is no mathematical model.

Q: Can you tell me about one or two accomplishments that you are particularly proud of?

A: I'm proud of all the work I've done so far. Some of my projects have gained a lot of attention and have really helped boost my visibility in the field. For example, the bone-inspired infill approach. Some other projects might be less visible, but I'm equally proud of them.

One accomplishment that I have been really excited about is the launch of the TOP Webinar series in 2020. It all started with the idea of bringing people together during a difficult time. It was incredible to see colleagues from all around the world joining online.

Q: Would you have any outlook for the future in computational design and digital fabrication: what exciting innovations or developments do you predict will happen in this field in the next 10 years?

A: Computational design is becoming more comprehensive. Previously, factors such as manufacturability were addressed in a post-process manner, but now we're seeing them being integrated into the computational design phase itself. It is yet to see the incorporation of factors such as sustainability and human experience into computational design.

Digital fabrication is also advancing rapidly. An exciting new area is robotic additive manufacturing, with robotic arms or even swarm robots. This offers very interesting new possibilities.

In the future, I envision an even more integrated approach to design and fabrication. I believe that the computation for manufacturing doesn't have to wait until the design is finalized, and rather should be an integral part in design optimization. By computation for manufacturing, I mean computer-aided manufacturing, including simulation of the manufacturing process, and process planning such as toolpath generation. This integration will result in more reliable manufacturing of optimal designs.

Q: You hold dual PhD degrees in computer science and mechanical engineering. How have your diverse academic backgrounds shaped your perspectives and contributed to new insights in your field?

A: Prior to delving into topology optimization, I had been embedded in robotics and computer graphics groups. I actively leverage my knowledge and experience in those fields, especially geometry computing, to inform my topology optimization research. This relates to what problems I choose to focus on, and how I address these problems. Structural design,

after all, is not only about mechanics, but also about geometry, among others.

Q: Would you have any suggestions for fellow junior researchers on research aspects?

A: What has really helped me and I would like to suggest to fellow junior researchers, is to find a topic that fascinates you. Do the research you enjoy, and develop methods and pursue results that you can be proud of. Another suggestion is to focus. In my opinion, focus is the key to make meaningful scientific contributions. Of course, we shouldn't forget to look around and get inspired. Finally, I think a little bit perfectionism is not a bad thing in academia.

Q: Can you tell us a bit about yourself outside research?

A: Sure. One of my favorite activities is playing badminton. These days I'm trying to teach my daughter how to make a proper serve in badminton. She is six years old, and has a lot of energy. I'm very happy that she is interested in this sport, and very importantly, interested in playing with me, though she doesn't like any of my instructions. I wish one day soon she and I can make a good doubles team.

Q: Anything else that you would like to add?

A: Yes, I wish to thank the ISSMO executive committee, past and current, and all our wonderful colleagues like Haftka, for shaping such a warm and vibrant research community. Also huge thanks to the award committee for this recognition.

Prepared by

Jun Wu, Associate Professor, Delft University of Technology, Netherlands,

Hongyi Xu, Assistant Professor, University of Connecticut, USA,

Ahmad Najafi, P. C. Chou Assistant Professor, Drexel University, USA.

SMO Journal Status Update

We would like to lead this update with a call for submission to the **WCSMO-15 Topical Collection**. Given the continuous publishing mode from 2022, papers accepted for the WCSM-15 TC will be published as they go yet enjoy higher search exposure as part of a popular TC. We aim to streamline the processing for the TC with a goal to reach a final decision within 4 months of submission. The deadline for submission is the end of 2023.

In 2022 we published 346 articles, with an acceptance rate of 24%. 2022 JCR Impact Factor declined slightly from 4.279 to 3.9 (Fig. 1). However, the decline is all due to our effort to reduce self-cites after receiving a warning from the indexing agency Clarivate. The IF excluding self-cites basically stayed flat at 3.3 for 2020, 2021 and 2022. According to Silvia, our publishing editor, the current self-cite level is much healthier according to the general publishing standards. SMO ranks in the first quadrant in the category 'Mechanics', while in Q2 in 'Multidisciplinary Engineering' and 'Computer Science Interdisciplinary Applications'.

Another important journal quality measure is the Elsevier CiteScore that accounts for cites of a four year time window as (cites 2019-2022)/(articles 2019-2022), which remained stable compared to 2021 (Fig. 2).

In the past year we took a new initiative to reduce the use of acronyms (with the exception of labels in tables and figures). We noticed that some authors use acronyms too liberally just for the purpose of reducing words, which adversely affects the readability of a paper. We would like to enforce the following guidelines: (1) Authors should limit acronym usage to widely accepted terms, e.g., RBDO, UQ etc.; (2) Authors should justify the plausibility with a footnote if the intention is to introduce a new acronym to the field.

The journal operates with a unique editorial process where the around 40 Review Editors volunteer for handling peer-review process. This system was invented by the founding Editor-in-Chief George Rozvany, and further enhanced by his successor Rafi Haftka, formally crediting the Handling Editor in each published paper. The RE team has a

natural renewal mechanism where new REs replace REs who take a sabbatical. In the past year, we welcomed the following new review editors to the editorial team: Hongyi, Xu, Zhen Hu, James Kai, Zequn Wang, Xueguan Song. In addition, Glaucio Paulino joined as Senior Advisor.

Finally, we want to congratulate authors whose papers were most cited according to the 2022 IF citation data. (see Fig. 3).

Figure 1. Impact factor in the latest 5 years

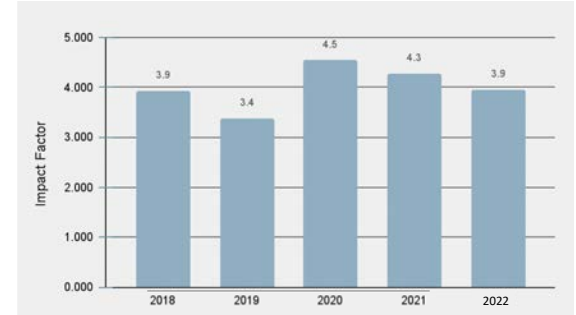


Figure 2. CiteScore in the latest 4 years

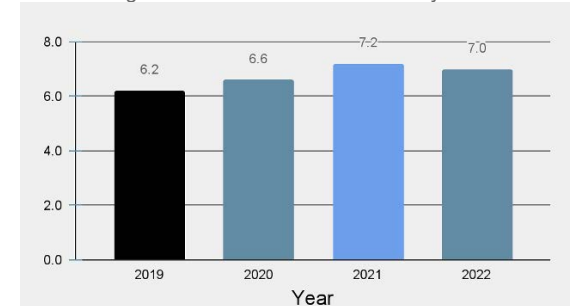


Figure 3. Top Ranking Highest Cited 2020-2021 Articles for IF (Impact Factor) Year 2022

Title	Author	Publication Type	Publication Date	DOI	Total Citations*	Citations For IF 2022
Topology optimization of multi-scale structures: a review	Wu, Jun; Sigmund, Ole; Groen, Jeroen P.	Review	2021	10.1007/s00158-021-02881-8	114	60
A new generation 99 line Matlab code for compliance topology optimization and its extension to 3D	Ferrari, Federico; Sigmund, Ole	Article	2020	10.1007/s00158-020-02629-w	85	35
A review on feature-mapping methods for structural optimization	Wein, Fabian; Dunning, Peter D.; Norato, Julian A.	Review	2020	10.1007/s00158-020-02649-6	61	31
TOuNN: Topology Optimization using Neural Networks	Chandrasekhar, Aaditya; Suresh, Krishnan	Article	2021	10.1007/s00158-020-02748-4	62	29
A novel method of distributed dynamic load identification for aircraft structure considering multi-source uncertainties	Wang, Lei; Liu, Yaru	Article	2020	10.1007/s00158-019-02448-8	73	23
A deep learning-based method for the design of microstructural materials	Tan, Ren Kai; Zhang, Nevin L.; Ye, Wenjing	Article	2020	10.1007/s00158-019-02424-2	44	21
Concurrent design of hierarchical structures with three-dimensional parameterized lattice microstructures for additive manufacturing	Wang, Chuang; Gu, Xiaojun; Zhu, Jihong; Zhou, Han; Li, Shaoying; Zhang, Weihong	Article	2020	10.1007/s00158-019-02408-2	46	19
A multi-objective optimization of the friction stir welding process using RSM-based-desirability function approach for joining aluminum alloy 6063-T6 pipes	Senthil, S. M.; Parameshwaran, R.; Ragu Nathan, S.; Bhuvanesh Kumar, M.; Deepandurai, K.	Article	2020	10.1007/s00158-020-02542-2	45	19
An efficient multi-objective optimization method based on the adaptive approximation model of the radial basis function	Liu, Xin; Liu, Xiang; Zhou, Zhenhua; Hu, Lin	Article	2021	10.1007/s00158-020-02766-2	35	19
Integrating deep learning into CAD/CAE system: generative design and evaluation of 3D conceptual wheel	Yoo, Soyoun; Lee, Sunghee; Kim, Seongsin; Hwang, Kwang Hyeon; Park, Jong Ho; Kang, Namwo	Article	2021	10.1007/s00158-021-02953-9	29	19
An active weight learning method for efficient reliability assessment with small failure probability	Meng, Zeng; Zhang, Zhuohui; Li, Gang; Zhang, Dequan	Article	2020	10.1007/s00158-019-02419-z	51	18
The heat source layout optimization using deep learning surrogate modeling	Chen, Xiaoqian; Chen, Xianqi; Zhou, Weien; Zhang, Jun; Yao, Wen	Article	2020	10.1007/s00158-020-02659-4	26	17

Prepared by

Ming Zhou, Chief Engineer – Computational Mechanics and Design Optimization, Altair Engineering, USA,

Gengdong Cheng, Professor, Dalian University of Technology, China,

Silvia Schilgerius, Senior Publishing Editor at Springer.

“Call for Papers the WCSMO-15 Topical Collection on the SMO Journal”

The SMO journal would like to **invite all participants** in the WCSMO-15 to submit their papers presented at the conference to the ‘WCSMO-15 Topical Collection’. In the past WCSMO Special Issues were on an invitational basis due to volume limit of a printed issue. However, since the journal moved to continuous publication in 2022, Special Issue takes the form of Topical Collection now. This removes the volume limit on the number of papers a printed issue can contain, hence allows us to open the TC to all participants.

Here are some benefits of submitting to the WCSMO-15 Topical Collection:

1. All of the papers in a TC are collected together and prominently displayed in that form on website. TCs receive their own link and are specially tagged to make them easier to share and find.
2. This could help **increase downloads**, amplify **search exposure**, and potentially raise **impact and citation**.
3. The editorial team will pay

particular attention to submissions to the TC, **striving to reach final decision within 4 months** from submission.

4. During submission, please select ‘WCSMO-15 Topical Collection’. The **deadline for the TC is end of 2023**.

Prepared by

Ming Zhou, Chief Engineer – Computational Mechanics and Design Optimization, Altair Engineering, USA.

Thematic Session on “Metamaterials, Architected Materials and Topology Optimization” in ICTAM2024

The 26th International Congress of Theoretical and Applied Mechanics (ICTAM2024) will be held in Daegu, Korea, August 25-30, 2024. The Congress Committee has chosen a selection of topics, covering a broad field of Mechanics, to be the subjects of Thematic Sessions.

As co-chairs of the Thematic Session on “Metamaterials, architected materials and topology optimization”, it is our pleasure to encourage acknowledged experts in this field to contribute to the Congress. We encourage researchers working in the general field of multiphysics metamaterials design, be it with intuitive, systematic or learning approaches, to submit their work to the session.

We write to encourage you to submit an abstract, to be presented in either a Lecture Session (occupying a 20-minute slot, including discussion) or a poster.

The deadline for submission is January 15, 2024, but you are highly encouraged to submit in good time prior to that final deadline. Your submission should be prepared according to the instructions given on the website www.ictam2024.org.

Whereas we are the organizers of the session, and we encourage you to submit a contribution to our Thematic Session you should be aware, however, that the final decision on whether a contribution is accepted rests with the International Papers Committee (IPC) of IUTAM. They will meet in March 2024 to make their decisions on which papers should be accepted. We will provide input to the IPC concerning all contributions submitted to our Thematic Session, but the final decision rests with them.

We very much hope that you will indeed submit a paper to the Congress, so that the Thematic Session on “Metamaterials,



architected materials and topology optimization” can truly represent the state-of-the-art in this exciting field.

Besides, we have learned the *Structural and Multidisciplinary Optimization* (SMO) journal will support the special issue publication of the papers selected from ICTAM 2024.

Prepared by

Wei Chen, Wilson-Cook Professor and Chair of Department of Mechanical Engineering, Northwestern University, USA.

Ole Sigmund, Professor in Department of Civil and Mechanical Engineering, Technical University of Denmark.

TOP Webinar

The Topology Optimization Webinar, or [TOP Webinar](http://top-webinar.org), continues to be highly attractive to numerous participants. We have organized six sessions since the ISSMO newsletter in October 2022. These sessions were organized by Xiaojia Shelly Zhang (University of Illinois at Urbana Champaign), Michael Stingl & Fabian Wein (University of Erlangen–Nuremberg), Gilho Yoon (Hanyang University), Kurt Maute (University of Colorado Boulder), Peter Dunning (University of Aberdeen), Grégoire Allaire, Amstutz Samuel and Benjamin Bogosel (Ecole Polytechnique). We are sincerely thankful to all organizers for their dedicated efforts in organizing these events. We wish to congratulate all presenters for their great work. And, of course, the fruitful discussions were not possible without the many participants who joined us on Zoom and YouTube. Thanks to all.

TOP Webinar was established at the onset of the COVID pandemic, a time when scientific exchange was facing significant disruptions. Its original intention was to keep our community connected by facilitating the sharing of the latest research and developments in the field. Over the years, the situation has improved considerably, with the lifting of travel restrictions and the resumption of on-site scientific conferences, such as the WCSMO in Cork in June 2023.

Given the changes in circumstances, it is now an appropriate time to reevaluate the primary purpose of the webinar and consider any necessary adaptations to its format. In the past months, we have actively sought input from various sources, including consultations with the ISSMO executive committee, colleagues, and students through informal discussions, resulting in a wealth of suggestions and ideas. Throughout the process, we came to the conclusion that the webinar retains a unique and significant role within our community. With regards to the format, we plan to expand the scope of future sessions beyond short presentation of the latest papers. Instead, we aim to offer a diverse range of activities, including doctoral consortiums, educational lectures, thematic sessions (e.g., special issues from the SMO journal), and engaging panel discussions. The flexibility provided by online events allows us to deliberately experiment with various formats, intending to cater for the needs of our community members at different stages of their scientific careers.

We invite colleagues who are interested in organizing a session to get in touch with us. Suggestions and questions are always welcome.

We are in the process of planning new sessions. For further details and



www.top-webinar.org



Delft University of Technology



updates, please refer to the website (<http://top-webinar.org/>).

Organizers:

Jun Wu, Associate Professor, Delft University of Technology, Netherlands,

Matthijs Langelaar, Professor, Delft University of Technology, Netherlands,

Fred van Keulen, Professor, Delft University of Technology, Netherlands,

Ole Sigmund, Professor, Technical University of Denmark, Denmark,

Niels Aage, Associate Professor, Technical University of Denmark, Denmark.

Note: If you would like to receive announcement emails, please register via this form,

<https://forms.gle/RqzMxM4FW7jPYnBCA> or send a message to topwebinar.org@gmail.com

JMD Webinar

The Journal of Mechanical Design Webinar is a series of webinars organized quarterly to feature interesting research work being published in the *Journal of Mechanical Design (JMD)*. The goal is to share the latest research and development in the field, and by doing so, to keep our community connected.

The webinar takes place online quarterly and features invited presentations of recently published/accepted articles in JMD. So far, the webinar has covered a diverse range of thematic topics, such as artificial intelligence, design for additive manufacturing, robot and robotic system design, early-stage product design, and more. Each JMD webinar includes a **90-minute Zoom webinar session** and a **30-minute gather.town session** for further discussion/networking. Register and watch past recordings at <https://asmejmd.org/webinar-2/>.

Upcoming ISSMO Endorsed Events

AIAA AVIATION Forum: 28 July–2 August 2024, Las Vegas, NV, USA



26th International Congress of Theoretical and Applied Mechanics: 25–30 August 2024 in Daegu, Korea.



AIAA SciTech Forum: 8–12 January 2024, Orlando, FL, USA



18th U.S. National Congress on Computational Mechanics: 20–24 July 2025, Chicago, Illinois, USA

<https://usnccm18.usacm.org>

Call for Volunteers – New Initiatives

ISSMO is determined to increase diversity and inclusion among its community and create opportunities for young researchers to develop their career. We welcome enthusiastic volunteers to work on different new initiatives and provide us with their unique perspectives and capabilities in various capacities. If you are interested, please send a one-page CV along with a one-paragraph description of what you would like to achieve by serving the ISSMO community to Dr. Oded Amir.

Website

Our website is available at <https://www.issmo.net/>. You can find information on membership, events including WCSMO and endorsed events, news including announcements and job openings, ISSMO newsletters, awards, and publications.

Becoming a Member

For membership listing and approval, please visit <https://www.issmo.net/membership/join-issmo/> and submit your information. If you have any difficulty, please email a resume with a list of publications to Secretary General. Associate membership is granted upon recommendation of one of the members of the executive committee based on record of activity in the field of Structural or Multidisciplinary Optimization. Full membership requires attendance of at least one of the World Congresses of Structural and Multidisciplinary Optimization.

Obituary: Dr. Sheng Chu



Photo Credit: Colleagues at OmniQuest

We are deeply saddened by the recent, sudden passing of our colleague and friend Dr. Sheng Chu on May 25, 2023. Sheng received his B.Eng. in Mechanical Engineering and Automation by the Wuhan University of Technology in 2015. He later completed his M.Sc. in Mechanical and Electronic Engineering at the Huazhong University of Science and Technology in 2018. Right after the completion of his M.Sc. he moved to UK to start his Ph.D. at Cardiff university as a member of the M2DO lab, under the supervision of Prof. H. Alicia Kim. In 2022 he successfully completed his Ph.D. thesis with the title: "Simultaneous sizing, layout and topology optimization for buckling and post buckling of stiffened panels". After the completion of his Ph.D. he moved to California as a visiting graduate student at the University of California, San Diego to continue his research. A few months later he received an offer to work as postdoc at the M2DO lab. His official postdoc appointment was due to

start on July 1st, 2023.

Sheng's hard work, dedication and passion for research led to numerous publications both during his M.Sc. studies and his time as a Ph.D. student. He significantly contributed to the field of topology optimization for buckling of stiffened panels, using multiple level-set functions and considering optimization for post buckling of stiffened panels for the first time. His work can be found in journals such as Structural and Multidisciplinary Optimization, AIAA journal and Computer Methods in Applied Mechanics and Engineering. The high quality of his work also led to his paper "Simultaneous layout and topology optimization of curved stiffened panels" winning the 2nd place of the 2020 Student Paper Competition organized by the AIAA MDO Technical Committee.

The researchers who collaborated with Sheng consistently remember him for his outstanding work ethics, his passion for learning and contributing new knowledge, his fruitful curiosity, and his openness to communicate and receive ideas. But beyond that, his colleagues and friends will always remember him for his great kindness, his humility, his profound sense of humor, his sweet and calm personality, and his eagerness to help people around him both in their work and personal lives.

We also want to extend our deepest condolences to Sheng's family, foremost his parents, who as Sheng mentioned in his Ph.D. thesis acknowledgments, always believed in him, and encouraged him to follow his dreams, providing unconditional support to all his decisions.

As we mourn the loss of our dear friend, we take a moment to celebrate his great contributions to the academic community and all the great research he accomplished before his path was cut so short.

He will be greatly missed.

Prepared by Dr. H. Alicia Kim, Jacobs Scholar Chair Professor in Structural and Material Optimization, Structural Engineering Department, University of California San Diego, USA.

Current Society Status

WCSMO-15 Statistics - Participation

- 560 abstracts were submitted from 26 countries/regions
- 528 abstracts accepted (485 presentation, 43 posters)
- 456 presentations, 42 posters
- 502 registrations from 26 countries/regions

WCSMO-1 (Goslar), 232 papers were submitted

WCSMO-2 (Zakopane), 188 papers were submitted

WCSMO-4 (Dalian), 222 papers were submitted

WCSMO-5 (Lido di Jesolo), 286 papers were submitted

WCSMO-6 (Rio de Janeiro), 564 papers were submitted

WCSMO-7 (Seoul), 419 papers were submitted

WCSMO-8 (Lisbon), 647 papers were submitted

WCSMO-9 (Shizuoka), 407 papers were submitted

WCSMO-10 (Orlando), 470 papers were submitted

WCSMO-11 (Sydney), 447 papers were submitted

WCSMO-12 (Braunschweig), 557 papers were submitted

WCSMO-13 (Beijing), 619 papers were submitted

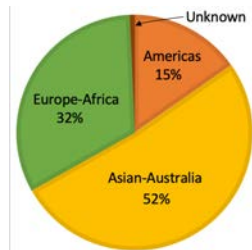
WCSMO-14 (Boulder), 567 papers were submitted

WCSMO-15 Statistics – Presentations (countries and regions)

China	86	India	12
South Korea	58	Poland	9
Germany	52	Australia	8
United States	46	Spain	7
Japan	37	Canada	4
France	24	Austria	3
Denmark	22	Israel	3
Belgium	16	Portugal	3
Netherlands	16	Czech Republic	2
Ireland	15	Hungary	2
Brazil	14	Italy	2
Sweden	14	Singapore	1
United Kingdom	13	Switzerland	1

ISSMO Membership (Total: 1867)

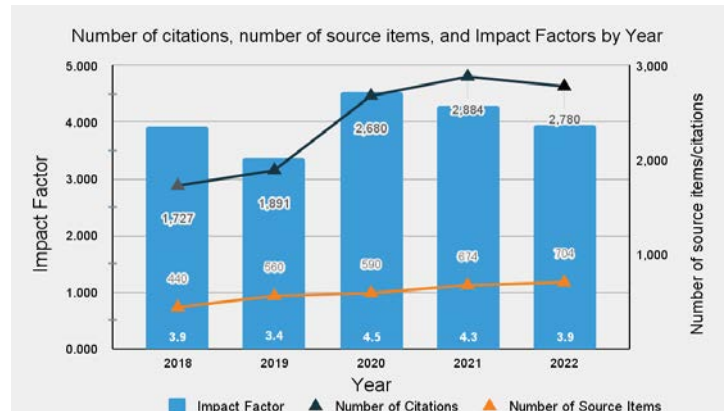
Members			
Americas	285	15%	
Asia-Australia	963	52%	
Europe-Africa	607	32%	



Budget May 2021 – June 2023

	Euro	DKK
Balance – May 2021 (reported at WCSMO-14, Boulder):	64,813	482,207
ISSMO membership fees from WCSMO-14	11,098	82,569
Interest income (negative interest)	-1220	-9,074
ISSMO Web (website update, hosting, voting & 2 year support);	-5,520	-41,066
IPC visit to Cork	-1183	-8808
ISSMO/Springer Prize and Haftka Young Investigator Award	-2,572	-19,137
Bank account charges and fees	-706	-5,255
Balance – June 2023 (prior to WCSMO-15, Cork):	64,709	481,436

Journal of Structural and Multidisciplinary Optimization Impact Factor



Ranking within categories in IF Year 2022

Category Name	Total Journals in Category	Journal Rank in Category	Quartile in Category
COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS	110	52	Q2
MECHANICS	137	32	Q1
ENGINEERING, MULTIDISCIPLINARY	90	27	Q2

Impact Factor Analysis* – for IF Year 2022

- Number of Source Items: 704
- Number of Cites: 2780**
- Journal Self Cites: 472 (17% of 2780)
- The 2-Year Impact Factor: 3.9
- The 2-Year Impact Factor, without self cites: 3.3
- The 5-Year Impact Factor: 4.2

The 0-cited-articles 'trend' for the years 2017-2021

Publication Year	Total Number of articles	Number of 0-Cited articles	% of 0-Cited articles
2017	249	48	19%
2018	311	50	16%
2019	279	38	14%
2020	323	38	12%
2021	381	63	17%
Total	1,543	237	

Prepared by Dr. H. Alicia Kim, Jacobs Scholar Chair Professor in Structural and Material Optimization, Structural Engineering Department, University of California San Diego, USA.

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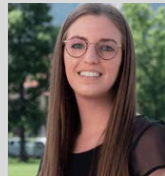
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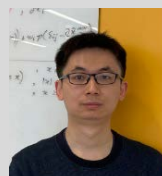
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