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MEMRO2018

The 8th International Symposium on Middle-Ear Mechanics in Research and Otology

July 5th – 9th, 2018
Shanghai, China

"Middle Ear Mechanics Technology and Oto-surgery"

PROGRAM

Organized by

Eye & ENT Hospital of Fudan University, Shanghai, China

Sponsors

Acknowledgements

Welcome to MEMRO2018

8th International Symposium on Middle Ear Mechanics in Research and Otology

Shanghai, China
July 5th-9th, 2018

Three years has passed since the last outstanding MEMRO2015 meeting in Aalborg, Denmark, where we had a cheerful time together. Now we are glad to announce the coming MEMRO2018 meeting. Adhering to the concept of the MEMRO meetings, MEMRO2018 aims at bringing together middle ear scientists, clinicians and engineers and promoting collaborations between the groups. The latest research in multiple areas such as middle ear physiology and pathology will be discussed, from experimental measurements to computational models, from diagnostics and imaging technologies to up-to-date surgical techniques and reconstructions, from theoretical issues of the middle ear biomechanics to the application of various hearing aids. The theme of MEMRO2018 is “Middle Ear Mechanics - Technology and Oto-surgery”.

Shanghai was selected as the venue of MEMRO2018 in 2015. This is the first time the MEMRO meeting is held in China. As a city of diversity and inclusiveness where ideas collide, and also as a city of spots and food, Shanghai attracts tens of millions people together. Now we would also bring the top researches in our area together, not only to exchange academic ideas, but also to have a happy time.

MEMRO2018 has received more than 130 abstracts, which laid the foundation of the meeting. The program is made up of several keynotes and invited speeches, 12 sessions with 78 oral presentations and 55 posters. The program schedule is quite dense, but it will be a relaxed and cheerful time talking with old friends and meeting new faces. Currently, we have more than 200 participants in this meeting.

To summarize, we wish all of you enjoy another great MEMRO meeting and enjoy your stay in China.

Welcome to MEMRO2018 in Shanghai, China!

Tianyu Zhang, MD,PhD
Chair of MEMRO2018
Eye & ENT Hospital of Fudan University
Shanghai, China

Rong Z Gan, PhD
Co-chair of MEMRO2018
University of Oklahoma
Oklahoma, USA

Committee Members

Scientific Committee

Jin-Ho Cho, PhD, Daegu, Republic of Korea
Michael L. Gaihede, MD, Aalborg, Denmark
Rong Z Gan, PhD, Oklahoma, USA
Anthony W Gummer, PhD, Tübingen, Germany
Alexander M Huber, MD, Zurich, Switzerland
Karl-Bernd Hüttenbrink, MD, Cologne, Germany
Michael McKenna, MD, Boston, USA
Sunil Puria, PhD, Boston, USA
John J. Rosowski, PhD, Boston, USA
Thomas Zahnert, MD, Dresden, Germany
Tianyu Zhang, MD,PhD, Shanghai, China

International Guest Faculty

Robert Adamson, PhD, Halifax, Canada
Jeffrey Tao Cheng, PhD, Boston, USA
Joris JJ Dirckx, PhD, Antwerp, Belgium
Dan Jiang, MD, London, UK
Thomas Lenarz, MD, Hannover, Germany
Christian Offergeld, PhD, Freiburg, Germany
Tianying Ren, PhD, Oregon, USA
Stefan Stenfelt, PhD, Linköping, Sweden
Abigail Tucker, PhD, London, UK
Hiroshi Wada, PhD, Sendai, Japan
Magnus von Unge, MD, Oslo, Norway

Local Organizing Committee (China)

Honorary Chair: Zhengmin Wang, MD/Academician of CAS
Chairs: Huawei Li,MD,PhD, Zhiqiang Gao,MD,PhD, Hao Wu,MD,PhD
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Fangyi Chen,PhD (Shenzhen)
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Haibo Wang,MD,PhD (Ji'nan)
Wenjuan Yao,PhD (Shanghai)
DingjunZha,MD,PhD (Xi'an)
Yu Zhao,MD,PhD (Chengdu)
Lifen Chen,PhD (Shanghai)
Peidong Dai,PhD (Shanghai)
Cheng Hua,PhD (Shanghai)
Hongyan Jiang,MD,PhD (Haikou)
Weijia Kong, MD,PhD (Wuhan)
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Jun Liu,MD,PhD (Beijing)
Lianjun Lu,MD,PhD (Xi'an)
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Zhushi Rao,PhD (Shanghai)
Jianjun Sun,MD,PhD (Beijing)
Peina Wu,MD,PhD (Guangzhou)
Wei Yuan,MD,PhD (Chongqing)
Jie Zhang, MD,PhD (Beijing)

Program at a Glance

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<tr><td>16:00 ~17:30</td><td>Reception</td></tr>
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Detailed Program

Friday, July 6, 2018

Time	Title/Author(s)	
07:00	Registration, Welcome Coffee, Technical Exhibition, Poster	
08:00	**Opening Ceremony**	**Moderator:** *Tianyu Zhang*
08:30	**Keynote 1** (45 min): ***Sunil Puria***, Boston, USA The Growing Potential of Finite Element Modeling as an Investigative Tool in Middle-Ear Mechanics	**Moderator:** *Rong Z Gan*
09:15	**Session 01 - Middle Ear Physiology / Evolution & Development** **Moderators:** *Michael Gaihede, Yongxin Li*	15min*3
09:15	**S01-1** A Novel Algorithm for Detection of Eustachian Tube Openings in Continuous Direct Middle Ear Pressure Recordings with Intact Tympanic Membrane Under Daily Conditions ***Morten Skaarup Larsen****, Frederik Skou Nielsen, Simona Padurariu, Lasse Riis Østergaard, Joris Dirckx, Henrik Jacobsen, Michael Gaihede* Aalborg, Denmark	
09:30	**S01-2** First Comparison of Modern Human and Chimpanzee Middle Ear Transfer Function ***Alexander Stoessel****, Steffen Ossmann, Matthias Bornitz, NikolozLasurashvili, Marcus Neudert* Jena, Germany	
09:45	**S01-3** Development of Sclerotic Changes and Decreased Mastoid Pneumatization in Diseased Middle Ears ***Michael Gaihede****, Simona Padurariu, Christof Röösli, Rasmus Røge, Mogens Vyberg, Alexander Huber* Aalborg, Denmark	
10:00	Coffee Break - Poster	
10:30	**Session 02: Surgical Techniques & Reconstructions** **Moderators:** *Karl-Bernd Hüttenbrink, Thomas Zahnert*	15min*8
10:30	**S02-1** Why Does a Retraction Pocket Develop? A New Theory on the Origin of Cholesteatoma and Its Impact on Therapy ***Karl-Bernd Hüttenbrink*** Cologne, Germany	
10:45	**S02-2** Medio-Lateral Graft Tympanoplasty for Repair of Anterior or Subtotal Tympanic Membrane Perforation ***Timothy Jung*** Loma Linda, USA	
11:00	**S02-3** Effects of Cochlear Implant Electrode Placement and Surgical Manipulations on Intracochlear Pressure Levels ***Renee Banakis Hartl****, Nathaniel Greene, Herman Jenkins, Stephen Cass, Daniel Tollin* Colorado, USA	
11:15	**S02-4** Influence of Annular Ligament Tension on the Middle Ear Sound Transfer Function ***Marcus Neudert****, Nikoloz Lasurashvili, Sandra Glausch, Thomas Zahnert, Matthias Bornitz*	

	Dresden, Germany	
11:30	**S02-5** Biomimetic Reconstruction of the Tympanic Membrane Using 3-Dimensionally Printed Grafts *Nicole Black, Elliott Kozin, Dhrumi Gandhi, Iman Ghanad, Jeffrey Tao Cheng, Jennifer Lewis, John Rosowski,* ***Aaron Remenschneider*** Boston, USA	
11:45	**S02-6** Evaluation of an Intraoperative Real-time Monitoring System for Ossiculoplasty ***Thomas Zahnert****, Matthias Bornitz, Nikoloz Lasurashvilli, Marie-Luise Metasch, Marcus Neudert* Dresden, Germany	
12:00	**S02-7** Analysis of Hearing Outcomes in Tympanosclerosis Patients Who Underwent Ossicular Chain Reconstruction Using Autologous Incus or PORP ***Yang Chen*** Xi'an, China	
12:15	**S02-8**An Optimal Partial Ossicular Prosthesis Should Connect Both to the Tympanic Membrane and Malleus. A Temporal Bone Study Using Laser Doppler Vibrometry ***Anders Niklasson****, Anton Rönnblom, Krister Tano, Kilian Gladiné, Joris Dirckx, and Magnus von Unge* Pitea, Sweden	
12:30	Lunch Break - Visit of the Technical Exhibition - Poster	
13:30	**Invited speaker** (30 min): ***Abigail Tucker***, London, UK Development and Repair of the Murine Ear-drum	**Moderator:** *Tianyu Zhang*
14:00	**Session 03: Middle Ear Implants (Active and Passive) (A)** **Moderators:** *Elizabeth Olson, Marcus Neudert*	15min*5
14:00	**S03-1** Development of Implantable Microphones for a Totally Implantable Cochlear Implant ***Elizabeth S. Olson****, Steve Park, Xiying Guan, Francis X. Creighton, Ioannis Kymissis, Hideko Heidi Nakajima* New York, USA	
14:15	**S03-2** Measurements of Eardrum Vibrations for the Optimized Fitting of Middle-Ear Implants *Katja Böck, Torsten Rahne,* ***Frank Böhnke*** Munich, Germany	
14:30	**S03-3** Mechano-acoustical Transfer Function of a Direct Acoustic Cochlear Stimulator ***Susan Busch****, Thomas Lenarz, Hannes Maier* Hannover, Germany	
14:45	**S03-4** Predicting Clinical Performance of Implantable Middle Ear Hearing Devices through Intracochlear Pressure Measurements in Cadaver Ears ***Hannes Maier****, Martin Grossoehmichen, Susan Busch, Ute A. Gamm, Bernd Waldmann, Thomas Lenarz* Hannover, Germany	
15:00	**S03-5** Experimental and Audiological Results of a Novel Device for Precise Round Window Coupling of the Vibrant Soundbridge *Nina Wardenge, Mathias Müller, Thomas Lenarz,* ***Hannes Maier***	

	Hannover, Germany
15:15	Coffee Break - Poster
15:45	**Session 04: Biomechanics of the Middle Ear (A)** 15min*7 **Moderators:** *Pieter Muyshondt, Jeffrey Cheng*
15:45	**S04-1** Average Umbo Vibration Response of the Human Ear Using Curve Feature Alignment ***Kilian Gladiné****, Joris Dirckx* Antwerp, Belgium
16:00	**S04-2** Tympanic Membrane Transient Response: Towards Better Understanding of the Role of the Tympanic Membrane in Sound Conduction ***Jeffrey Tao Cheng****, Payam Razavi, Haimi Tang, Nima Maftoon, Michael Ravicz, John Rosowski, Cosme Furlong* Boston, USA
16:15	**S04-3** Association Between the Air-bone Gap and Vibration of the Tympanic Membrane after Myringoplasty *Yin Zhang,* ***Jie Wang****, Fei Zhao, Yongxin Li* Beijing, China
16:30	**S04-4** Quasi-static and Dynamic Mechanical Behavior of Avian Middle-ear Structures: Experimental and Model Investigations ***Pieter Muyshondt****, Raf Claes, Peter Aerts, Joris Dirckx* Antwerp, Belgium
16:45	**S04-5** Oval and Round Window Occlusion Affects Bone Conduction in Cadaver Heads ***Keguang Chen****, Huiying Lyu, Dongming Yin, Lin Yang, Tianyu Zhang, Peidong Dai* Shanghai, China
17:00	**S04-6** Static and Dynamic Forces in the Incudostapedial Joint Gap ***Martin Koch****, Till Moritz Essinger, Martin Angerer, Thomas Stoppe, Matthias Bornitz, Marcus Neudert, Thomas Zahnert* Dresden, Germany
17:15	**S04-7** Effects of the Hardening of Stapedial Annular Ligament on the Acoustic Responses of Human Ear ***Jing Zhang****, Fengning Yu, Donglin Zou, Na Ta, Zhushi Rao* Shanghai, China
18:30	Bus to Reception Banquet (Marriott Hotel)

Saturday, July 7

08:00	**Keynote 2** (45 min): ***Alexander Huber***, Zürich, Switzerland. Biomechanics in Otology – The Clinician's View	**Moderator:** *Tianyu Zhang*
08:45	**Session 05 - Middle Ear Implants (Active and Passive) (B)** **Moderators:** *Hannes Maier, Zhiqiang Gao*	15min*5
08:45	**S05-1** Maximizing the Transfer Efficiency in Baha Attract ***Henrik Fyrlund*** Mölnlycke, Sweden	
09:00	**S05-2** Surgical Experience of Combined Intervention EAC Reconstruction and Baha® Attract Implantation ***Yun Li****, Meiping Huang, Zhihua Zhang, Zhaoyan Wang, Huan Jia, Hao Wu* Shanghai, China	
09:15	**S05-3** Making the Most of Cochlear Reserve with Acoustic Implants ***Hannes Maier*** Hannover, Germany	
09:30	**S05-4** To Evaluate the Validation and Precision of Applying Mixed Reality Technology in BAHA Attract Implant Surgery ***Zhiqiang Gao****, Tian Xu, Guodong Feng* Beijing, China	
09:45	**S05-5** Novel 3D-printed Slippery Liquid-infused Porous Surface (SLIPS) Tympanostomy Tubes Prevent Cell Adhesion and Demonstrate Superior Fluid Drainage ***Nicole Black****, Ida Pavlichenko, Elliott Kozin, Michael Kreder, Claas Visser, Jeffrey Tao Cheng, Jennifer Lewis, Joanna Aizenberg, Aaron Remenschneider* Boston, USA	
10:00	Coffee Break - Poster	
10:30	**Session 06 - Bone Conduction (Basic Science and Clinical Application) (A)** **Moderators:** *Stefan Stenfelt, Hao Wu*	15min*8
10:30	**S06-1** The Influence of the Skin and Subcutaneous Tissues During Bone Conduction Stimulation at the Mastoid ***Stefan Stenfelt****, You Chang* Linköping, Sweden	
10:45	**S06-2** Experimental Investigation of Bone Conduction Pathways: 3D Surface Motion and Wave Propagation ***Ivo Dobrev****, Alexander Huber, Christof Röösli* Zürich, Switzerland	
11:00	**S06-3** Experience of a 20 Implantations of BAHA Attract in Bilateral Atresia Cases ***Youzhou Xie****, Liujie Ren, Yaoyao Fu, Yaying Zhu, Tianyu Zhang* Shanghai, China	
11:15	**S06-4** Intracochlear Pressure Measurements to Study Bone Conduction Transmission on Fresh-Frozen Human Temporal Bones ***Charlotte Borgers****, Guy Fierens, Tristan Putzeys, Joris Walraevens, Astrid van Wieringen, Nicolas Verhaert* Leuven, Belgium	
11:30	**S06-5** An Overview on MED-EL Bone Conduction Hearing Solutions	

	Hamidreza Mojallal Wien, Austria
11:45	**S06-6** Experimental Investigation of Bone Conduction Pathways: Stimulation Site and Coupling Type Dependence *Ivo Dobrev, Alexander Huber,* ***Christof Röösli*** Zürich, Switzerland
12:00	**S06-7** Sound Transmission Efficiency Evaluation of Direct Promontory Stimulating in Cats *Youzhou Xie,* ***Yuxuan Shi****, Liujie Ren, Lin Yang, Peidong Dai, Tianyu Zhang* Shanghai, China
12:15	**S06-8** Directional Sensitivity of the Cochlea in Bone Conduction Hearing in the Guinea Pig *Mingduo Zhao, Anders Fridberger,* ***Stefan Stenfelt*** Linköping, Sweden
12:30	Lunch Break - Poster
13:30	**Session 07 - High Intensity Sound-Induced Hearing Damage and Protection** 15min*7 **Moderators:** *Heath Jones, Namas Chandra*
13:30	**S07-1** Dual-Laser Measurement and Finite Element Modeling of Human Tympanic Membrane Motion under Blast Exposure ***Rong Z Gan****, Shangyuan Jiang, Kyle Smith* Oklahoma, USA
13:45	**S07-2** Human Middle-ear Muscles Rarely Contract in Anticipation of Acoustic Impulses ***Heath Jones****, Nathaniel Greene, William Ahroon* *Alabama,* USA
14.00	**S07-3** Stapes Displacement in Response to Low-frequency, High-intensity Sounds: A Cross Species Study ***John Peacock****, Mohamed Alhussaini, Daniel Tollin* Colorado, USA
14:15	**S07-4** Stapes Displacement and Intracochlear Pressure in Response to Very High Level, High Frequency Sounds ***Nathaniel Greene****, James Easter, Daniel Tollin, Theodore Argo, Tim Walilko* Colorado, USA
14:30	**S07-5** Middle-ear Muscle Contractions are not Dependable Hearing Protection *William Ahroon, Stephen Tasko, Gregory Flamme, Kristy Deiters, Kara McGregor, Madeline Smith, William Murphy, Nathaniel Greene,* ***Heath Jones*** *Alabama,* USA
14:45	**S07-6** Progressive Hearing Damage after Repeated Exposure to Low Level of Blast Overpressure in Chinchillas ***Tao Chen****, Kyle Smith, Shangyuan Jiang, Tianyu Zhang, Rong Z Gan* Shanghai, China

15:00	**S07-7** Central and Peripheral Auditory Injuries in Animal Models after Blast Exposure ***Namas Chandra****, Ningning Shao, Kakulavarapu Rama Rao, Shangyuan Jiang, Tao Chen, Marcus Brown, Rong Z Gan* New Jersey, USA
15:15	Coffee Break - Poster
15:45	**Session 08 - Bone Conduction (B) and Imaging Technologies** 15min*8 **Moderators:** *Li Qi, Xiaowei Chen*
15:45	**S08-1** Objectively Measure Audibility and Advanced Features of Bone Anchored Hearing Devices (BAHDs) Using a Skull Simulator and Speech Stimuli ***Li Qi****, Jianju Liu, John Pumford, Jacqueline Wong* Vancouver, Canada
16:00	**S08-2** Outcome Evaluation of Bone Conduction Hearing Aids in Patients with Bilateral Microtia-atresia Based on a Long Term Follow-up ***Xiaowei Chen****, Xinmiao Fan,Yibei Wang, Yue Fan, Xiaomin Niu* Beijing, China
16:15	**S08-3** Bone-conduction Induced 3D Motion of the Human Ossicles with Normal and Stiffened Ossicular Joints ***Xiying Guan****, Sunil Puria* Boston, USA
16:30	**S08-4** A Comprehensive Biomechanical Model of the Sandwich Beam structure of the Human Stapedial Annular Ligament via Multiphoton Imaging ***Merlin Schär****, Ivo Dobrev, Christof Röösli, Alexander Huber, Jae Hoon Sim* Zurich, Switzerland
16:45	**S08-5** Differential Temporal Bone Vibration under Bone Conducted Stimulation Through LDV Measurements ***Liujie Ren****,Yuxuan Shi, Jia Li, Dongming Yin, Lin Yang, Peidong Dai, Tianyu Zhang* Shanghai, China
17:00	**S08-6** The Value of MSCT Post-processing Technique in the Diagnosis of Conductive Hearing Loss with an Intact Tympanic Membrane ***Lianjun Lu*** Xi'an, China
17:15	**S08-7** Endoscopic Optical Coherence Tomography for In-vivo-imaging of the Human Tympanic Membrane ***Joseph Morgenstern****, Lars Kirsten, Martin Schindler, Jonas Golde, Mikael Timo Erkkilä, Julia Walther, Matthias Bornitz, Marcus Neudert, Edmund Koch, Thomas Zahnert* Dresden, Germany
17:30	**S08-8** Diffusion-weighted (DW)-MRI in Detecting Cholestetoma Recidivism: Is It a Reliable Follow-up Strategy? ***Nadir Yildirim****, Şahinde Atlanoglu* Kütahya, Turkey
17:45	Bus to Pujiang River Tour

Sunday, July 8

08:00	**Keynote 3** (45 min): ***Brian Applegate***, Texas, USA Subnanometer Spatially Resolved Vibrometry of Middle and Inner Ear with Optical Coherence Tomography and Vibrometry	**Moderator:** *Rong Z Gan*
08:45	**Session09 - Biomechanics of the Middle Ear (B)** **Moderators:** *Nathaniel Greene, Jae Hoon Sim*	15min*5
08:45	**S09-1** Effects of Chronological Age on Neonatal Tympanogram with 226-Hz Probe Tone ***Nattikan Kanka**, Michio Murakoshi, Shinji Hamanishi, Hiroshi Wada* Sendai, Japan	
09:00	**S09-2** Characteristics of the External- and Middle-ear Dynamics in Neonates ***Michio Murakoshi**, Venkatesh Aithal, Shinji Hamanishi, Joseph Kei, Hiroshi Wada* Sendai, Japan	
09:15	**S09-3** Intracochlear Pressure Change by the 3D Motion Components of the Stapes *Ivo Dobrev, Merlin Schär, Michail Chatzimichalis, Lukas Prochazka, Flurin Pfiffner, Christof Röösli, Alexander Huber,* ***Jae Hoon Sim*** Zurich, Switzerland	
09:30	**S09-4** Measurement of the Through-thickness Young's Modulus of a Human Tympanic Membrane by Nanoindentation *Huiyang Luo, Fang Wang, Don Nakmali, Chengkai Dai, Wei Li, Rong Z Gan,* ***Hongbing Lu*** Texas, USA	
09:45	**S09-5** The Effect of Ossicular Joint Fusion on the Human Middle Ear Frequency Response ***Yona Vaisbuch**, Peter Gottlieb, Sunil Puria* California, USA	
10:00	Conference Photo	
10:15	Coffee Break – Poster	
10:30	**Session 10 - Computational Models** **Moderators:** *Hiroshi Wada, Frank Boehke*	15min*7
10:30	**S10-1** The Development and Application of a Finite Element Model for Bone-conducted Sound ***You Chang**, Namkeun Kim, Stefan Stenfelt* Linköping, Sweden	
10:45	**S10-2** The Whole Human Head with Bone Conduction Simulation *Tongge Wu, Jia Li,* ***Lifen Chen**, Lin Yang, Tianyu Zhang* Shanghai, China	
11:00	**S10-3** Patient-specific Functional Model-Based Hearing Diagnostic ***Benjamin Sackmann**, Peter Eberhard, Ernst Dalhoff, Michael Lauxmann* Reutlingen, Germany	
11:15	**S10-4** Comparation of Shear Strain under Different Geometrical Morphology in Lateral Semicircular Canals ***Caiqin Wu**, Peidong Dai, Cheng Hua, Keqiang Wang, Tianyu Zhang, Lin Yang* Shanghai, China	
11:30	**S10-5** Statistical Shape Analysis of the Human Middle Ear and Its Implications on the	

	Middle Ear Transfer Function ***Steffen Ossmann**, Matthias Bornitz, Marcus Neudert* Dresden, Germany
11:45	**S10-6** Model Predictions of the Sensitivity Change for Air Conduction and Bone Conduction Stimulation after Cochlear Implantation Through the Round Window ***Stefan Stenfelt*** Linköping, Sweden
12:00	**S10-7** Fitting the Cochlear Mechanical Responses at Different Input Levels Using a Pole-zero Model ***Guangjian Ni**, Stephen Elliott* Tianjin, China
12:15	Lunch Break, Scientific Committee Meeting
13:15	**Session 11 - Middle Ear Pathology and Diagnostics** 15min*7 **Moderators:** *Wei Dong, Magnus von Unge*
13:15	**S11-1** Intra-operative Measurement of Cochlear Microphonic for Assessment of Middle-Ear Transfer Function ***Sho Kanzaki**,Takuji Koike, Yuika Irie, Ryo Ebine, Takashi Fujishiro, Cher Sze Keats, Takenobu Higo, Kenji Ohoyama, Masaaki Hayashi, Hajime Ikegami* Tokyo, Japan
13:30	**S11-2** Minimally Invasive Laser Vibrometry (MIVIB) Using a Floating Mass Transducer: Technical Aspects ***Kilian Gladiné**, Jeremy Wales, Paul Van de Heyning, Vedat Topsakal, Magnus von Unge, Joris Dirckx* Antwerp, Belgium
13:45	**S11-3** Distortion Product Otoacoustic Emissions: A Sensitive Measure of Tympanic Membrane Perforation and Healing Processes in a Gerbil Model ***Wei Dong**, Glenna Stomackin, Xiaohui Lin, Timothy Jung, Glen Martin* Loma Linda, USA
14:00	**S11-4** Minimally Invasive Intra-operative Laser Vibrometry (MIVIB) with a Floating Mass Transducer - A New Method for Objective Evaluation of the Middle Ear Function *Jeremy Wales, Killian Gladiné, Paul Van de Heyning, Vedat Topsakal, Juha Silvola,* ***Magnus von Unge**, Joris Dirckx* Oslo, Norway
14:15	**S11-5** Controlled Frequency Specific Activation of the Auditory System after Optoacoustic Stimulation from the Ear Drum to the Inner Ear *Patricia Stahn, Katharina Sorg, Marius Hinsberger, Lukas Pillong, Caroline Bopp, Hubert H. Lim, Hans-Jochen Foth, Achim Langenbucher, Bernhard Schick,* ***Gentiana I. Wenzel*** Homburg, Germany
14:30	**S11-6** Audiological Needs with Severe Mixed Hearing Loss vs. Capabilities of Power Hearing Aids and Acoustic Implants *Nina Wardenga,* ***Bernd Waldmann**, Thomas Lenarz, Hannes Maier* Hannover, Germany
14:45	**S11-7** Prediction of Speech Comprehension Benefits Using a Real-time Simulation of an Active Implantable Hearing Aid ***Till Moritz Essinger**, Matthias Bornitz, Martin Koch, Nikoloz Lasurashvili, Alexander*

	Hellmuth, Markus Neudert, Thomas Zahnert Dresden, Germany	
15:00	Coffee Break	
15:30	**Session 12 - Middle Ear Implants (Active and Passive) (C)** **Moderators:** *Christian Offergeld, Huawei Li*	15min*4
15:30	**S12-1** Static Loading Forces Required for Optimal Coupling of the Carina T2 Actuator ***Ute A. Gamm****, Martin Großöhmichen, Thomas Lenarz, Hannes Maier* Hannover, Germany	
15:45	**S12-2** Evaluating Usability of the Carina T2 Actuator in a Direct Acoustic Cochlear Implant (DACI) Configuration, with Measurements of Intracochlear Pressure in Cadaver Ears ***Ute A. Gamm****, Martin Großöhmichen, Bernd Waldmann, Thomas Lenarz, Hannes Maier* Hannover, Germany	
16:00	**S12-3** Feedback Pathways with a Direct Acoustic Cochlear Implant ***Bernd Waldmann****, Eugen Kludt, Thomas Lenarz, Hannes Maier* Hannover, Germany	
16:15	**S12-4** How to Measure Aided Thresholds with Active Middle Ear Implants ***Bernd Waldmann*** Hannover, Germany	
16:30 - 18:00	**Closing session:**Moderated by Dr. Gan and Dr. Zhang 1. Awards (Logo design, Oral & Poster) 2. Invitation to MEMRO 2021 3. Closing Remarks	

Poster Session

PS01~ PS30 Friday, July 6
PS31~ PS55 Saturday, July 7

PS01~10 Biomechanics of the Middle Ear
PS11~13 Middle Ear Physiology
PS14~25 Surgical Techniques & Reconstructions
PS26~33 Middle Ear Pathology and Diagnostics
PS34~37 Middle Ear Implants (Active and Passive)
PS38~43 Computational Models
PS44~48 Imaging Technologies
PS49~55 Bone Conduction (Basic Science and Clinical Application)

#	Title and Author(s)
PS01	The Effect of Stapes Annular Ligament and Round Window Membrane Hardening on Basement Membrane Dynamics ***Wenjuan Yao**, Jicheng Zhong, Yudong Ma* Shanghai, China
PS02	Middle-ear Mechanics and Interaural Coupling in the Lizard: a Finite-element Approach *Pieter Livens, **Pieter Muyshondt**, Joris Dirckx* Antwerp, Belgium
PS03	The Characteristics of Middle-ear Resonance Frequency in Normal Person ***Zhemaiwei Zhao**,Ying Lin, Dingjun Zha* Xi'an, China
PS04	Finite-element Modelling of the Energy Reflectance/Absorbance of the Chinese Adult Patients with Otitis Media with Effusion ***Wen Jiang**, Peng Wang, Fei Zhao, Yuehua Qiao, Wen Liu, Yuxuan Xing, Yue Tong, Yang Wu* Xuzhou, China
PS05	Wideband Absorbance in Adults with Tympanic Membrane Perforation ***Qiang Guo**, Zhemaiwei Zhao* Xi'an, China
PS06	Numerical Study of Middle Ear Transfer Function Due to Age Related Changes ***Lei Zhou**, Maoli Duan, Xinsheng Huang* Shanghai, China
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PS08	Small Tympanic Membrane Perforations in the Inferior Quadrants do not Impact the Manubrium Vibration in Guinea Pigs *Wandong She, **Xiuling Zhang**, Shuyi Zhang, Xiaoping Du* Nanjing, China

PS09	Finite-element Modelling of the Human Middle Ear Based on X-ray Micro Computed Tomography and Doppler Optical Coherence Tomography in the Same Ear ***Xuan Wang**, Dan MacDougall, Josh Farell, Thomas Landry, W. Robert J. Funnell, Robert Adamson* Quebec/Montreal, Canada
PS10	Effects of Joints of the Middle Ear on Air- and Bone-Conducted Hearing *Seongho Mo, **Namkeun Kim*** Incheon, South Korea
PS11	Quantification of the Effects of Middle Ear Quasi-static Stiffness on Sound Transmission via a Novel 3-axis Optical Force Sensor *Ivo Dobrev, Jae Hoon Sim, BaktashAqtashi, Alexander Huber, Thomas Linder, **Christof Röösli*** Zurich, Switzerland
PS12	On the Functional Compartmentation of the Middle Ear. A Histomorphological Study of the Middle Ear Mucosa. *Simona Padurariu, Christof Röösli, Rasmus Røge, Mogens Vyberg, Alexander Huber, **Michael Gaihede*** Aalborg, Denmark
PS13	Middle-ear Forward and Reverse Transmission and Their Effect on the Otoacoustic Emissions in a Mouse Finite-element Model ***Hamid Motallebzadeh**, Sunil Puria* Boston, USA
PS14	Sheep Middle Ear as a Model for Otosurgery ***Krister Tano*** Luleå, Sweden
PS15	Endoscopic vs Microscopic Approach to Stapes Surgery - Which to Choose? ***Ao Li**, Yu Jiao, Xiaoyun Qian, Xia Gao* Nanjing, China
PS16	The Active Dresden Tympanoplasty Model – Opportunities and Limits ***Hannes Seidler**, Thomas Stoppe, Marie-Luise Metasch, Matthias Bornitz, Marcus Neudert, Thomas Zahnert* Dresden, Germany
PS17	Partial Resection of Temporal Bone in the Prevention and Treatment of Cerebrospinal Fluid Otorrhea *Furong Ma, **Yu Song*** Beijing, China
PS18	Optimum Tympanic Membrane Reconstruction When Using the Soundbridge Hearing System ***Matthias Bornitz**, Christoph Müller, Thomas Zahnert* Dresden, Germany
PS19	The Effects of Conductive Components in the Audiogram on Hearing Aid Fitting *Ashley Bookmyer, **Yunfang Zheng**, Dawn Nelson, Jianwei Guan, Jackie Rowlett* Mount Pleasant, USA
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PS21	Incus Position of Stapes Piston Prosthesis Affects Sound Induced Piston Vibration in Human Cadaveric Temporal Bones ***Iman Ghanad**, Elliott Kozin, Jeffrey Tao Cheng, John Rosowski, Aaron Remenschneider* Boston, USA
PS22	Surgical Treatment of External Auditory Canal and Middle Ear in Microtia with Congenital Aural Stenosis ***Chenlong Li**, Tianyu Zhang* Shanghai, China
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PS24	Influence of Angular Positioning of Prosthesis in Stapes Surgeries *Pascale Cuny, Nawaf Alsolami, Ivo Dobrev, Christof Röösli, Alexander Huber,* ***Jae Hoon Sim*** Zurich, Switzerland
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PS27	Clinical Analysis of Audiology in Patients with Myringosclerosis *Yongbo Zheng,****Yu Zhao*** Chengdu, China
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PS31	The Application of Wideband Acoustic Immittance in the Identification of Middle Ear Pathology - A Systematic Review ***Wen Jiang**, Yuxuan Xing, Yuehua Qiao, Fei Zhao, Peng Wang, Wen Liu, Yue Tong, Yang Wu* Xuzhou, China
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	***Elliott Kozin**, Danielle Trakimas, Reuven Ishai, Iman Ghanad, Nicole Black, Jeffery Tao Cheng, Aaron Remenschneider* Boston, USA
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PS47	Microanatomy Research on the Stapedio-vestibular Joint of Guinea Pigs ***Lin Yang**,Tengyi Zhang, Yuxuan Shi, Liujie Ren, Yaying Zhu, Tianyu Zhang, Keqiang Wang* Shanghai, China
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PS53	Bone Conduction Hearing in the Guinea Pig and the Effect of Artificially Induced Middle Ear Lesions ***Mingduo Zhao**, Anders Fridberger, Stefan Stenfelt* Linkoping, Sweden
PS54	Bone Conduction Hearing in the Blockage of Oval and/or Round Windows in Cats ***Keguang Chen**, Huiying Lyu, Dongming Yin, Lin Yang, Tianyu Zhang, Peidong Dai* Shanghai, China
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