Program of Session H

Semiconductors

H1: August 5 (Tuesday), 14:00-15:30
Room: 304
Chair: Ke Xu

14:00-14:30	**H01 (Invited)** Optimized Process Strategies for Ultra-high purity Ge Crystalline Semiconductors **Pradeep C. Palleti, R. Radhakrishnan Sumathi, Leibniz-Institute for Crystal Growth, GERMANY**
14:30-14:45	**H02 (Oral)** Improvement of heating system of cusp Czochralski silicon crystal growth furnace **Chieh Hu, Jyh-Chen Chen, Thi-Hoai-Thu Nguyen, Guan-Yu Lin, Wei-Jie Lin, Liang-Chin Chen, National Central University, CHINESE TAIPEI**
14:45-15:00	**H03 (Oral)** Numerical investigation of oxygen concentration and v/G distribution in 300 mm Czochralski silicon **Anchen Tang, Xuefeng Han, Yuan Shuai, Yu Gao, Jianwei Cao, Xiangyang Ma, Deren Yang, Zhejiang University, CHINA**
15:00-15:15	**H04 (Oral)** Performance Characterization and Failure Mechanisms of SiC Photoconductive Semiconductor Switches **Shengnan Jiang, Xuechao Liu, Zhong Zheng, Weiyi He, Hengduo Wu, Zhenqi Li, Tao Liu, Xiuhong Pan, Kun Chen, Shanghai Institute of Ceramics, Chinese Academy of Sciences, CHINA**
15:15-:15:30	**H05 (Oral)** Resistivity Uniformity Analysis in FZ Si Growth Using 3D Modeling **Andrey Smirnov, Aleksa Crnobrnja, Petar Jovanovic, STR Belgrade, SERBIA AND MONTENEGRO**

H2: August 5 (Tuesday), 16:00-17:30
Room: 304
Chair: Hideto Miyake

16:00-16:30	**H06 (Invited)** Numerical study of SiC Crystal Growth by Top-seeded Solution Growth Method **Zaoyang Li, Yao Yang, Chongchong Qi, Lijun Liu, Xi'an Jiaotong University, CHINA**

16:30-16:45	**H07 (Oral)** Epitaxial Growth of 4-inch Diamond Wafer by Microwave Plasma Chemical Vapor Deposition **Zhiguo Tian, Moran Wang, Tsinghua University, CHINA**
16:45-17:00	**H08 (Oral)** Inclusions in Mass-Produced Float-Zone Silicon and Their Impact on Ridge Line Fracture During Growth **Yuanyuan Zuo, Shuai Yuan, Xuefeng Han, Hengtao Ge, Lingfeng Xu, Zhaoshuai Gao, Deren Yang, Zhejiang University, CHINA**
17:00-17:15	**H09 (Oral)** InAs-based type-II quantum wells grown by molecular beam epitaxy for mid-infrared interband cascade lasers **Jinglong Xie, Shihao Zhu, Yuzhe Lin, Wanhua Zheng, Hong Lu, Nanjing University, CHINA**
17:15-:17:30	**H10 (Oral)** Numerical simulation of temperature field and thermal stress of β-Ga_2O_3 single crystal grown by resistance-preheated laser floating zone method **Yihao Liu, Wencheng Ma, Tianjin University of Technology, CHINA**

H3: August 6 (Wednesday), 9:00-10:30
Room: 304
Chair: Zaoyang Li

9:00-9:30	**H11 (Invited)** Growth and performance analysis of advanced semiconductor crystal $CsPbX_3$ **Rastgo Hawrami, Elsa Ariesanti, Awand Piro, Liviu Matei, Vlad Buliga, Hemin Parkhe, Alireza Kargar, Jarek Glodo, Aleksey E. Bolotnikov, Erik Muller, Erik Farquhar, Thomas Y. Tsang, Fisk University, USA**
9:30-10:00	**H12 (Invited)** Thermal Management of Wide Bandgap Semiconductors: Revolution, Opportunity & Challenge from Diamond **Yan Zhou, Nanjing Normal University, CHINA**
10:00-10:15	**H13 (Oral)** Elevating the thermoelectric performance in the sub-ambient temperature range for electronic refrigeration **Xiaojing Ma, Jun Mao, Harbin Institute of Technology (Shenzhen), CHINA**
10:15-10:30	**H14 (Oral)** Diamond surface and devices **Kang Liu, Harbin Institute of Technology, CHINA**

H4: August 6 (Wednesday), 11:00-12:30
Room: 304
Chair: Ke Xu

11:00-11:30	**H15 (Invited)** Polarity-controlled GaN epitaxial materials and devices **Wenliang Wang, Chenyu Liu, Runjie Zhou, Yixun He, South China University of Technology, CHINA**
11:30-12:00	**H16 (Invited)** Epitaxial Growth of High-Quality Nitride Semiconductors via Pulsed Sputtering **Hiroshi Fujioka, Kohei Ueno, The University of Tokyo, JAPAN**
12:00-12:15	**H17 (Oral)** Fabrication of N-polar AlN Films on 4H-SiC Substrates via Polarity Inversion Technique **Yuning Wang, Tomohiro Tamano, Tomoya Higashi, Ryota Akaike, Hiroki Yasunaga, Takao Nakamura, Hideto Miyake, Mie University, JAPAN**
12:15-12:30	**H18 (Oral)** Growth of GaN single crystal on the top seed by flux method **Xi Wu, Nanning Normal University, CHINA**

H5: August 7 (Thursday), 11:00-12:30
Room: 304
Chair: Xuefeng Han

11:00-11:30	**H19 (Invited)** High quality 6-inch AlN MOCVD growth and 240 nm AlGaN-based micro-LEDs **Shunpeng Lu, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences, CHINA**
11:30-12:00	**H20 (Invited)** Improvement of steepness and carrier injection efficiency of heterojunction interface between electron blocking layer and guide layer in AlGaN-based UV-B laser diodes **Motoaki Iwaya, Takumu Saito, Rintaro Miyake, Sho Iwayama, Tetsuya Takeuchi, Satoshi Kamiyama, Hideto Miyake, Meijo University, JAPAN**
12:00-12:15	**H21 (Oral)** TCAD Simulation of Single-Event Burn-Out Characteristics in reverse blocking p-GaN Gate HEMTs **Ga Zhang, Xiufeng Song, Shenglei Zhao, Jincheng Zhang, Yue Hao, Xidian University, CHINA**
12:15-12:30	**H22 (Oral)** Investigation on temperature performance of AlGaN/GaN/AlN HEMT device **Xuejing Sun, Linhuan Gao, Xiufeng Song, Chuangzhe Cao, Longyang Yu, Shenglei Zhao, Jincheng Zhang, Yue Hao, Xidian University, CHINA**

H6: August 7 (Thursday), 14:00-16:15
Room: 304
Chair: Hideto Miyake

14:00-14:30	**H23 (Invited)** Point- and extended-defects in nitride semiconductors **Mike Leszczynski, Ewa Grzanka, Robert Czernecki, Mikolaj Grabowski, Roman Hrytsak, Artur Lachowski, Julita Smalc-Koziorowska, Institute of High Pressure Physics, POLAND**
14:30-14:45	**H24 (Oral)** EBSD Analysis of Low Angle Grain Boundaries in Sapphire Substrates and Its Impact on HVPE-Grown GaN Crystals **Yongliang Shao, Yongzhong Wu, Xiaopeng Hao, Fusheng Zhang, Baoguo Zhang, Haixiao Hu, Dong Shi, Qilu University of Technology, CHINA**
14:45-15:00	**H25 (Oral)** MOVPE deposition of β-Ga_2O_3 on 4H-SiC templates: a study of nucleation and growth mechanisms **Roberto Fornari, Gianfranco Sfuncia, Corrado Bongiorno, Giuseppe Nicotra, Matteo Bosi, Luca Seravalli, Francesco Mezzadri, Antonella Parisini, Nadia Licciardello, Davide Patti, Delfo Sanfilippo, University of Parma, ITALY**
15:00-15:15	**H26 (Oral)** Effects of Source Supply Ratio and Growth Rate on Surface Morphology of a (010) β-Ga_2O_3 Crystal During Oxide Vapor Phase Epitaxy **Eisho Kishimoto, Masayuki Imanishi, Shigeyoshi Usami, Mihoko Maruyama, Masashi Yoshimura, Yusuke Mori, The University of Osaka, JAPAN**
15:15-15:30	**H27 (Oral)** First-Principles Calculations of Effective Mass of Impurity-Doped Ga_2O_3 **Takahiro Kawamura, Toru Akiyama, Akira Kusaba, Yoshihiro Kangawa, Mie University, JAPAN**
15:30-15:45	**H28 (Oral)** Analysis of the effect of process conditions on thermal stresses and dopants during Ga_2O_3 crystal growth by the edge-defined film-fed method (EFG) **Zhou Zhang, Suzhou STR Software Technology Co.Ltd., CHINA**
15:45-16:15	**H29 (Invited)** Molecular-Beam Epitaxy of Multinary III–V Semiconductor Nanowires on Si Wafer Toward Unexplored Functionalities **Fumitaro Ishikawa, Hokkaido University, JAPAN**