

Room A (101)

Session Title 26A3 / [T01] Mode-Locked Lasers II
Date & Time Wednesday, 26 August, 15:45 ~ 17:45
Session Chair Fengqiu Wang (Nanjing University, China)

[26A3-1] 15:45~16:15 Invited Talk

Sub-fs Hybrid Synchronization between Mode-Locked Fiber Lasers

Y. Lai¹, W.-W. Hsiang², and S.-Y. Wu¹

¹National Chiao Tung University, Taiwan, ²Fu Jen Catholic University, Taiwan

Sub-fs timing synchronization between a 1030 nm Yb doped and a 1560 nm Er-doped mode-locked fiber laser is successfully demonstrated by utilizing a hybrid passive/active approach. The physical mechanisms for determining the relative timing jitter are clarified.

[26A3-2] 16:15~16:30

Dispersion Management in Nanotube Mode-Locked, Compact Linear-Cavity Fiber Laser

Tomoyasu Honda, Yu Wang, and Shinji Yamashita

The University of Tokyo, Japan

By managing the intracavity dispersion in nanotube mode-locked linear-cavity fiber laser, we achieved dissipative soliton operation at repetition rate of 62.5 MHz, which is the highest repetition rate for dissipative soliton.

[26A3-3] 16:30~16:45

Efficient Diode-Pumped High Power Femtosecond Yb:LYSO Laser

Wenlong Tian¹, Zhaohua Wang², Zhiyi Wei², Jiangfeng Zhu¹, Lihe Zheng², Xiaodong Xu², and Jun Xu²

¹Xidian University, China, ²Chinese Academy of Sciences, China

We report on a diode-pumped high power femtosecond Yb:LYSO laser. More than 3 W average power with pulse duration of 215 fs at 1042 nm and 297 fs at 1035 nm, respectively, were obtained.

[26A3-4] 16:45~17:00

Diode-Pumped Kerr-Lens Mode-Locked Yb:GSO Laser Generating 72 fs Pulses

Wenlong Tian¹, Zhaohua Wang², Zhiyi Wei², Jiangfeng Zhu¹, Lihe Zheng², Xiaodong Xu², and Jun Xu²

¹Xidian University, China, ²Chinese Academy of Sciences, China

We demonstrated a diode-pumped Kerr-lens mode-locked Yb:GSO laser starting with SESAM. Stable mode-locking operation with average power of 85 mW and pulse duration of 72 fs was realized at repetition rate of 113 MHz.

[26A3-5] 17:00~17:15

Dissipative Soliton Generation in All Fiber Mode Locked Thulium Laser

Fangzhou Tan, Jiang Liu, Huihui Li, and Pu Wang

Beijing University of Technology, China

We demonstrate an all fiber dispersion managed mode locked thulium laser generating sub-200 fs pulses with 168 mW output power at repetition rate of 30 MHz.

[26A3-6] 17:15~17:30

Dissipative Soliton Yb-Doped Fiber Laser Using a Bulk-Structured Bi₂Te₃ Topological Insulator

Junsu Lee, Cheolhwan Chi, Joonhoi Koo, and Ju Han Lee

University of Seoul, Korea

We experimentally demonstrate mode-locking of an ytterbium-doped fiber laser using a bulk-structured Bi₂Te₃ topological insulator. The stable mode-locked pulses with temporal width of ~230 ps and repetition rate of 1.44 MHz were obtained.

[26A3-7] 17:30~17:45

Multiwavelength, Subpicosecond Pulse Generation from a SWNT-SA Mode-Locked Ring Birefringent Fiber Laser

Guoqing Hu¹, Xin Zhao¹, Ya Liu¹, Zijun Yao¹, Meng Zhang¹, and Zheng Zheng^{1,2}

¹Beihang University, China, ²Collaborative Innovation Center of Geospatial Technology, China

By leveraging the polarization interference filtering and the gain profile tilting based on polarization dependent loss tuning, ultrashort pulses at up to four wavelengths are generated covering both 1530 and 1560 nm windows of the C-band.

Room B (102)

Session Title 26B3 / [T13] 3D Display
Date & Time Wednesday, 26 August, 15:45 ~ 17:45
Session Chairs Kun Liu (Tianjin University, China)
Hee-Jin Choi (Sejong University, Korea)

[26B3-1] 15:45~16:15 Invited Talk

Highly Immersive Head-mounted Displays Based on Aspherical and Freeform Optics

Dewen Cheng and Yongtian Wang

Beijing Institute of Technology, China

Field of view (FOV) and resolution are two key parameters for head-mounted displays (HMDs), which determine the user's experience including immersion and comfort. We present four different designs for large FOV and high resolution HMDs developed at Beijing Institute of Technology. Each of them provides an FOV greater than 80 degrees and an angular resolution better than 4 arcminutes. Two of the designs are immersive for virtual reality applications, and the other two are optical see-through for augmented reality applications. The designs can be divided into another two categories according to the size of the display devices employed. Design methods and experimental results are discussed in detail.

[26B3-2] 16:15~16:45 Invited Talk

Switchable Liquid Crystal Lens for 3D Applications

Ki-Beom Son, Min-Kyu Park, Mugeon Kim, Heewon Park, and Hak-Rin Kim

Kyungpook National University, Korea

We developed a polarization dependent reactive mesogen lens array by using both bottom-up and top-down alignment method for 2D/3D switchable 3D device systems like autostereoscopic display and light field camera.

[26B3-3] 16:45~17:00

Full-color Table-top Display with Rotating Transmissive Screen

Kwang-Soo Kim¹, Hosung Jeon¹, Hwi Kim², and Joonku Hahn¹

¹Kyungpook National University, Korea, ²Korea University, Korea

We already suggested a 360-degree table top display system using transmissive screen. We improve our system as a full-color table-top display using RGB LEDs and cross dichroic prism.

[26B3-4] 17:00~17:15

Time-Multiplexed Two-Directional Sequential Projections for Integral Imaging 3D Display

Md. Ashrafur Alam¹, Seok-Hee Jeon², and Nam Kim¹

¹Chungbuk National University, Korea, ²Incheon National University, Korea

A time-multiplexed two-directional sequential projection scheme (TTSP) is proposed and demonstrated to implement a viewing-angle-enhanced integral imaging display system. The main idea behind the method is sharing of the same image screen to display two sets of directional elemental images (DEIs) in a time-multiplexed sequential projection manner.

[26B3-5] 17:15~17:30

Comparison of Perceived Depth Resolution between Different Image Generation Methods for Lenticular 3D Display

Minyoung Park and Hee-Jin Choi

Sejong University, Korea

The shape of the displayed image of the lenticular lens array method is changed with the sampling methods. In this paper, we try to compare the perceived depth resolution between different sampling methods.

[26B3-6] 17:30~17:45

Luminance Profile Control Method Using Gradation Iris for Autostereoscopic 3D Displays

Munekazu Date¹, Tohru Kawakami², Mutsumi Sasai², and Hideaki Takada¹

¹Nippon Telegraph and Telephone Corporation, Japan, ²Tohoku University, Japan

A precise control method of angular luminance distribution of viewing zone using a filter with gradation in transmittance in an iris of a projector is proposed for autostereoscopic 3D display with smooth motion parallax.