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Publications

PUBLICATIONS

- **A flexible proton beam imaging energy spectrometer (PROBIES) for high repetition rate or single-shot high energy density (HED) experiments (invited)** *REVIEW OF SCIENTIFIC INSTRUMENTS*
  Mariscal, D. A., Djordjevic, B. Z., Anirudh, R., Bremer, T., Campbell, P. C., Feister, S., Folsom, E., Grace, E. S., Hollinger, R., Jacobs, S. A., Kailkhura, B., Kalantar, D., Kemp, et al
  2023; 94 (2): 023507

- **Compact high repetition rate Thomson parabola ion spectrometer** *REVIEW OF SCIENTIFIC INSTRUMENTS*
  Nedbailo, R., Park, J., Hollinger, R., Wang, S., Mariscal, D., Morrison, J., Song, H., Zeraouli, G., Scott, G. G., Ma, T., Rocca, J. J.
  2023; 94 (2): 023505

- **Ablating Ion Velocity Distributions in Short-Pulse-Heated Solids via X-Ray Doppler Shifts** *PHYSICAL REVIEW LETTERS*
  Kraus, B. F., Gao, L., Fox, W., Hill, K. W., Bitter, M., Efthimion, P. C., Moreau, A., Hollinger, R., Wang, S., Song, H., Rocca, J. J.
  2022; 129 (23): 235001

- **Ultra-compact x-ray spectrometer for high-repetition-rate laser-plasma experiments** *REVIEW OF SCIENTIFIC INSTRUMENTS*
  Zeraouli, G., Mariscal, D., Grace, E., Scott, G. G., Swanson, K. K., Simpson, R., Djordjevic, B. Z., Nedbailo, R., Song, H., Morrison, J., Park, J., Hollinger, R., Wang, et al
  2022; 93 (11)

- **Investigation of Proton Beam-Driven Fusion Reactions Generated by an Ultra-Short Petawatt-Scale Laser Pulse** *LASER AND PARTICLE BEAMS*
  Schollmeier, M. S., Shirvanyan, V., Capper, C., Steinke, S., Higginson, A., Hollinger, R., Morrison, J. T., Nedbailo, R., Song, H., Wang, S., Rocca, J. J., Korn, G.
  2022; 2022

- **Applications of machine learning to a compact magnetic spectrometer for high repetition rate, laser-driven particle acceleration** *REVIEW OF SCIENTIFIC INSTRUMENTS*
  Swanson, K. K., Mariscal, D. A., Djordjevic, B. Z., Zeraouli, G., Scott, G. G., Hollinger, R., Wang, S., Song, H., Sullivan, B., Nedbailo, R., Rocca, J. J., Ma, T.
  2022; 93 (10): 103547

- **Streaked sub-ps-resolution x-ray line shapes and implications for solid-density plasma dynamics (invited)** *REVIEW OF SCIENTIFIC INSTRUMENTS*
  Kraus, B. F., Gao, L., Hill, K. W., Bitter, M., Efthimion, P. C., Hollinger, R., Wang, S., Song, H., Nedbailo, R., Rocca, J. J., Mancini, R. C., Beatty, C. B., MacDonald, et al
  2022; 93 (10): 103527

- **Homogeneous, Micron-Scale High-Energy-Density Matter Generated by Relativistic Laser-Solid Interactions** *PHYSICAL REVIEW LETTERS*
  Beier, N. F., Allison, H., Efthimion, P., Flippo, K. A., Gao, L., Hansen, S. B., Hill, K., Hollinger, R., Logantha, M., Musthafa, Y., Nedbailo, R., Senthilkumaran, V., Shepherd, et al
  2022; 129 (13): 135001

- **Multi-GeV Electron Bunches from an All-Optical Laser Wakefield Accelerator** *PHYSICAL REVIEW X*
  Miao, B., Shrock, J. E., Feder, L., Hollinger, R. C., Morrison, J., Nedbailo, R., Picksley, A., Song, H., Wang, S., Rocca, J. J., Milchberg, H. M.
  2022; 12 (3)

- **High-repetition-rate, multi-MeV deuteron acceleration from converging heavy water microjets at laser intensities of 10(21) W/cm(2)** *APPLIED PHYSICS LETTERS*
  Treffert, F., Curry, C. B., Chou, H. J., Crissman, C. J., DePonte, D. P., Fiuza, F., Glenn, G. D., Hollinger, R. C., Nedbailo, R., Park, J., Schoenwaelder, C., Song, H., Wang, et al
  2022; 121 (7)

- **Vacuum laser acceleration of super-ponderomotive electrons using relativistic transparency injection.** *Nature communications*
  Singh, P. K., Li, F. Y., Huang, C. K., Moreau, A., Hollinger, R., Junghans, A., Favalli, A., Calvi, C., Wang, S., Wang, Y., Song, H., Rocca, J. J., Reinovsky, et al
  2022; 13 (1): 54

- **Solid-Density Ion Temperature from Redshifted and Double-Peaked Stark Line Shapes** *PHYSICAL REVIEW LETTERS*
  Kraus, B. F., Gao, L., Hill, K. W., Bitter, M., Efthimion, P. C., Gomez, T. A., Moreau, A., Hollinger, R., Wang, S., Song, H., Rocca, J. J., Mancini, R. C.
  2021; 127 (20): 205001

- **Design of flexible proton beam imaging energy spectrometers (PROBIES)** *PLASMA PHYSICS AND CONTROLLED FUSION*
  Mariscal, D. A., Djordjevic, B. Z., Grace, E. S., Hollinger, R., Ma, T., Scott, G. G., Song, H., Simpson, R. A., Rocca, J. J., Wang, S.
  2021; 63 (11)

- **Comparing plasma conditions in short-pulse-heated foils via fine-structure x-ray emission** *REVIEW OF SCIENTIFIC INSTRUMENTS*
  Kraus, B. F., Chien, A., Gao, L., Hill, K. W., Bitter, M., Efthimion, P. C., Chen, H., Schneider, M. B., Moreau, A., Hollinger, R., Wang, S., Song, H., Rocca, et al
  2021; 92 (3): 033525

- **Single-shot picosecond resolution Fourier transform holographic microscopy with large field of view using a compact soft X-ray laser**
  Wang, S., Rockwood, A., Wang, Y., Chao, W., Naulleau, P., Song, H., Menoni, C., Marconi, M., Rocca, J. J.
  edited by Bleiner, D.
  SPIE-INT SOC OPTICAL ENGINEERING.2021

- **Single-shot large field of view Fourier transform holography with a picosecond plasma-based soft X-ray laser** *OPTICS EXPRESS*
  Wang, S., Rockwood, A., Wang, Y., Chao, W., Naulleau, P., Song, H., Menoni, C. S., Marconi, M., Rocca, J. J.
  2020; 28 (24): 35898-35909

- **Extreme ionization of heavy atoms in solid-density plasmas by relativistic second-harmonic laser pulses** *NATURE PHOTONICS*
  Hollinger, R., Wang, S., Wang, Y., Moreau, A., Capeluto, M. G., Song, H., Rockwood, A., Bayarsaikhan, E., Kaymak, Pukhov, A., Shlyaptsev, V. N., Rocca, J. J.
  2020; 14 (10): 607-+

- **Femtosecond Chirped-Pulse Amplifier System Based on Spectrum Control and Dispersion Optimization** *CHINESE JOURNAL OF LASERS-ZHONGGUO JIGUANG*
  Niu Jia, Liu Bowen, Song Huanyu, Zhao Sicong, Li Shaobei, Wang Tienan, Gu Xinhua, Chai Lu, Hu Minglie
  2020; 47 (1)

- **High-pulse-quality Yb-fiber amplifier generation of 10 mu J, 250 fs pulses at 500 kHz repetition rate** *OPTIK*
  Niu, J., Liu, B., Song, H., Zhao, S., Li, S., Gu, X., Hu, M.
  2020; 200

- **Strain compensated robust semiconductor saturable absorber mirror for fiber lasers** *CHINESE OPTICS LETTERS*
  Wang, Y., Lin, N., Gao, W., Song, H., Hu, M., Li, H., Bao, W., Ma, X., Zhang, Z.
  2019; 17 (7)

- **Research Status and Development Trend of High Power Femtosecond Fiber Laser Amplifiers** *CHINESE JOURNAL OF LASERS-ZHONGGUO JIGUANG*
  Yan Dongyu, Liu Bowen, Song Huanyu, Li Yuan, Chu Yuxi, Chai Lu, Hu Minglie, Wang Chingyue
  2019; 46 (5)

- **Hybrid femtosecond laser system based on a Yb:KGW regenerative amplifier for N-P polarization** *CHINESE OPTICS LETTERS*
  Yan, D., Liu, B., Chu, Y., Song, H., Chai, L., Hu, M., Wang, C.
  2019; 17 (4)

- **1.1 mu m Femtosecond Laser Pulses Generation From 1.06 mu m Self-Seeded Picosecond Coherent Raman Fiber Amplification and Frequency Shift** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Chen, W., Xu, Z., Ge, A., Gao, Y., Fan, J., Song, H., Liu, B., Li, J., Wang, C., Hu, M.
  2018; 36 (22): 5237-5243

- **Femtosecond laser pulse generation with self-similar amplification of picosecond laser pulses** *OPTICS EXPRESS*
  Song, H., Liu, B., Chen, W., Li, Y., Song, Y., Wang, S., Chai, L., Wang, C., Hu, M.
  2018; 26 (20): 26411-26421

- **Femtosecond Fiber Amplification System Based on Third-Order Dispersion Compensation Technique** *LASER & OPTOELECTRONICS PROGRESS*
  Hao Jingyu, Liu Bowen, Song Huanyu, Wen Liang, Niu Jia, Chai Lu, Hu Minglie, Wang Qingyue
  2018; 55 (5)

- **Femtosecond Laser Pulse Generation from Picosecond Laser Source with Self-Similar Amplification**
  Song, H., Chen, W., Song, Y., Hu, M., Liu, B., IEEE
  IEEE.2018

- **High Damage Threshold Semiconductor Saturable Absorber Mirror for Fiber Lasers**
  Wang, Y., Lin, N., Gao, W., Song, H., Hu, M., Li, H., Bao, W., Ma, X., Zhang, Z., IEEE
  IEEE.2018

- **Intensity and temporal noise characteristics in femtosecond optical parametric amplifiers** *OPTICS EXPRESS*
  Chen, W., Fan, J., Ge, A., Song, H., Song, Y., Liu, B., Chai, L., Wang, C., Hu, M.
  2017; 25 (25): 31263-31272

- **Practical 24-fs, 1-mu J, 1-MHz Yb-fiber laser amplification system** *OPTICS EXPRESS*
  Song, H., Liu, B., Li, Y., Song, Y., He, H., Chai, L., Hu, M., Wang, C.
  2017; 25 (7): 7559-7566

- **Optimization of Nonlinear Compensation in a High-Energy Femtosecond Fiber CPA System by Negative TOD Fiber** *IEEE PHOTONICS JOURNAL*
  Song, H., Liu, B., Wen, L., Wang, C., Hu, M.
  2017; 9 (2)

- **Investigation of photodamage by femtosecond laser to cells via gold nanorods** *JOURNAL OF INNOVATIVE OPTICAL HEALTH SCIENCES*
  Li, Y., He, H., Song, H., Liu, B., Hu, M., Wang, C.
  2017; 10 (1)