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ACADEMIC APPOINTMENTS

- Physical Science Research Scientist, W. W. Hansen Experimental Physics Laboratory

Publications

PUBLICATIONS

- **Interferometric imaging of thermal expansion for temperature control in retinal laser therapy** *BIOMEDICAL OPTICS EXPRESS*
  Veysset, D., Ling, T., Zhuo, Y., Pandiyan, V., Sabesan, R., Palanker, D.
  2022; 13 (2): 728-743
- **Interferometric imaging of thermal expansion for temperature control in retinal laser therapy.** *Biomedical optics express*
  Veysset, D., Ling, T., Zhuo, Y., Pandiyan, V. P., Sabesan, R., Palanker, D.
  2022; 13 (2): 728-743
- **Melting and Ejecta Produced by High Velocity Microparticle Impacts of Steel on Tin** *JOURNAL OF APPLIED MECHANICS-TRANSACTIONS OF THE ASME*
  Lienhard, J., Veysset, D., Nelson, K. A., Schuh, C. A.
  2021; 88 (11)
- **The effect of substrate temperature on the critical velocity in microparticle impact bonding** *APPLIED PHYSICS LETTERS*
  Chaban, I., Sun, Y., Veysset, D., Nelson, K. A., Schuh, C. A.
  2021; 119 (1)
- **Supersonic impact resilience of nanoarchitected carbon.** *Nature materials*
  Portela, C. M., Edwards, B. W., Veysset, D., Sun, Y., Nelson, K. A., Kochmann, D. M., Greer, J. R.
  2021
- **Strong fatigue-resistant nanofibrous hydrogels inspired by lobster underbelly** *MATTER*
  Ni, J., Lin, S., Qin, Z., Veysset, D., Liu, X., Sun, Y., Hsieh, A. J., Radovitzky, R., Nelson, K. A., Zhao, X.
  2021; 4 (6): 1919-1934
- **Modelling of micro-particles perforations into human tissue surrogate: Numerical and analytical aspects** *EXTREME MECHANICS LETTERS*
  Meng, S., Shen, J., Taddei, L., Lebaal, N., Veysset, D., Nelson, K. A., Roth, S.
  2021; 45
- **Bottom-up design toward dynamically robust polyurethane elastomers** *POLYMER*
  Hsieh, A. J., Wu, Y., Hu, W., Mikhail, J. P., Veysset, D., Kooi, S. E., Nelson, K. A., Rutledge, G. C., Swager, T. M.
  2021; 218
- **High-velocity micro-projectile impact testing** *APPLIED PHYSICS REVIEWS*
  Veysset, D., Lee, J., Hassani, M., Kooi, S. E., Thomas, E. L., Nelson, K. A.

2021; 8 (1)

- **Imaging of photoacoustic-mediated permeabilization of giant unilamellar vesicles (GUVs).** *Scientific reports*
  Pereira, D. A., Silva, A. D., Martins, P. A., Piedade, A. P., Martynowych, D., Veysset, D., Moreno, M. J., Serpa, C., Nelson, K. A., Arnaut, L. G.
  2021; 11 (1): 2775
- **In situ observations of jetting in the divergent rebound regime for high-velocity metallic microparticle impact** *APPLIED PHYSICS LETTERS*
  Sun, Y., Veysset, D., Nelson, K. A., Schuh, C. A.
  2020; 117 (13)
- **Surface oxide and hydroxide effects on aluminum microparticle impact bonding** *ACTA MATERIALIA*
  Lienhard, J., Crook, C., Azar, M., Hassani, M., Mumm, D. R., Veysset, D., Apelian, D., Nelson, K. A., Champagne, V., Nardi, A., Schuh, C. A., Valdevit, L.
  2020; 197: 28-39
- **Particle size effects in metallic microparticle impact-bonding** *ACTA MATERIALIA*
  Dowding, I., Hassani, M., Sun, Y., Veysset, D., Nelson, K. A., Schuh, C. A.
  2020; 194: 40-48
- **Cleavable comonomers enable degradable, recyclable thermoset plastics** *NATURE*
  Shieh, P., Zhang, W., Husted, K. E. L., Kristufek, S. L., Xiong, B., Lundberg, D. J., Lem, J., Veysset, D., Sun, Y., Nelson, K. A., Plata, D. L., Johnson, J. A.
  2020; 583 (7817): 542-+
- **Impact-induced glass-to-rubber transition of polyurea under high-velocity temperature-controlled microparticle impact** *APPLIED PHYSICS LETTERS*
  Sun, Y., Kooi, S. E., Nelson, K. A., Hsieh, A. J., Veysset, D.
  2020; 117 (2)
- **Interferometric and fluorescence analysis of shock wave effects on cell membrane** *COMMUNICATIONS PHYSICS*
  Ito, Y., Veysset, D., Kooi, S. E., Martynowych, D., Nakagawa, K., Nelson, K. A.
  2020; 3 (1)
- **Multi-frame interferometric imaging with a femtosecond stroboscopic pulse train for observing irreversible phenomena** *REVIEW OF SCIENTIFIC INSTRUMENTS*
  Martynowych, D., Veysset, D., Maznev, A. A., Sun, Y., Kooi, S. E., Nelson, K. A.
  2020; 91 (3): 033711
- **Laser-driven high-velocity microparticle launcher in atmosphere and under vacuum** *INTERNATIONAL JOURNAL OF IMPACT ENGINEERING*
  Veysset, D., Sun, Y., Kooi, S. E., Lem, J., Nelson, K. A.
  2020; 137
- **Material hardness at strain rates beyond 10(6) s(-1) via high velocity microparticle impact indentation** *SCRIPTA MATERIALIA*
  Hassani, M., Veysset, D., Nelson, K. A., Schuh, C. A.
  2020; 177: 198-202
- **Molecular dependencies of dynamic stiffening and strengthening through high strain rate microparticle impact of polyurethane and polyurea elastomers** *APPLIED PHYSICS LETTERS*
  Sun, Y., Wu, Y., Veysset, D., Kooi, S. E., Hu, W., Swager, T. M., Nelson, K. A., Hsieh, A. J.
  2019; 115 (9)
- **Impact-bonding with aluminum, silver, and gold microparticles: Toward understanding the role of native oxide layer** *APPLIED SURFACE SCIENCE*
  Hassani-Gangaraj, M., Veysset, D., Nelson, K. A., Schuh, C. A.
  2019; 476: 528-532
- **Unraveling the high strain-rate dynamic stiffening in select model polyurethanes - the role of intermolecular hydrogen bonding** *POLYMER*
  Wu, Y., Hu, W., Sun, Y., Veysset, D., Kooi, S. E., Nelson, K. A., Swager, T. M., Hsieh, A. J.
  2019; 168: 218-227
- **Adhesion strength of titanium particles to alumina substrates: A combined cold spray and LIPIT study** *SURFACE & COATINGS TECHNOLOGY*

Imbriglio, S. I., Hassani-Gangaraj, M., Veysset, D., Aghasibeig, M., Gauvin, R., Nelson, K. A., Schuh, C. A., Chromik, R. R.
2019; 361: 403-412

- **Response to Comment on "Adiabatic shear instability is not necessary for adhesion in cold spray"** *SCRIPTA MATERIALIA*
  Hassani-Gangaraj, M., Veysset, D., Champagne, V. K., Nelson, K. A., Schuh, C. A.
  2019; 162: 515-519

- **Glass fracture by focusing of laser-generated nanosecond surface acoustic waves** *SCRIPTA MATERIALIA*
  Veysset, D., Kooi, S. E., Haferssas, R., Hassani-Gangaraj, M., Islam, M., Maznev, A. A., Chernukha, Y., Zhao, X., Nakagawa, K., Martynowych, D., Zhang, X., Lomonosov, A. M., Schuh, et al
  2019; 158: 42-45

- **Melt-driven erosion in microparticle impact** *NATURE COMMUNICATIONS*
  Hassani-Gangaraj, M., Veysset, D., Nelson, K. A., Schuh, C. A.
  2018; 9: 5077

- **Extreme Energy Absorption in Glassy Polymer Thin Films by Supersonic Micro-projectile Impact** *MATERIALS TODAY*
  Hyon, J., Lawal, O., Fried, O., Thevamaran, R., Yazdi, S., Zhou, M., Veysset, D., Kooi, S. E., Jiao, Y., Hsiao, M., Streit, J., Vaia, R. A., Thomas, et al
  2018; 21 (8): 817-824

- **High-velocity micro-particle impact on gelatin and synthetic hydrogel** *JOURNAL OF THE MECHANICAL BEHAVIOR OF BIOMEDICAL MATERIALS*
  Veysset, D., Kooi, S. E., Maznev, A. A., Tang, S., Mijailovic, A. S., Yang, Y., Geiser, K., Van Vliet, K. J., Olsen, B. D., Nelson, K. A.
  2018; 86: 71-76

- **Adiabatic shear instability is not necessary for adhesion in cold spray** *ACTA MATERIALIA*
  Hassani-Gangaraj, M., Veysset, D., Champagne, V. K., Nelson, K. A., Schuh, C. A.
  2018; 158: 430-439

- **Molecular influence in the glass/polymer interface design: The role of segmental dynamics** *POLYMER*
  Hsieh, A. J., Veysset, D., Miranda, D. F., Kooi, S. E., Runt, J., Nelson, K. A.
  2018; 146: 222-229

- **Single-bubble and multibubble cavitation in water triggered by laser-driven focusing shock waves** *PHYSICAL REVIEW E*
  Veysset, D., Gutierrez-Hernandez, U., Dresselhaus-Cooper, L., De Colle, F., Kooi, S., Nelson, K. A., Quinto-Su, P. A., Pezeril, T.
  2018; 97 (5): 053112

- **In-situ observations of single micro-particle impact bonding** *SCRIPTA MATERIALIA*
  Hassani-Gangaraj, M., Veysset, D., Nelson, K. A., Schuh, C. A.
  2018; 145: 9-13

- **Dynamics of supersonic microparticle impact on elastomers revealed by real-time multi-frame imaging (vol 6, 2018)** *SCIENTIFIC REPORTS*
  Veysset, D., Hsieh, A. J., Kooi, S., Maznev, A. A., Masser, K. A., Nelson, K. A.
  2018; 8: 46944

- **Simulation of Polyurea Shock Response under High-Velocity Microparticle Impact**
  Gorfain, J. E., Key, C. T., Veysset, D., Nelson, K. A.
  edited by Chau, R., Germann, T. C., Lane, J. M., Brown, E. N., Eggert, J. H., Knudson, M. D.
  AMER INST PHYSICS.2018

- **Melting Can Hinder Impact-Induced Adhesion** *PHYSICAL REVIEW LETTERS*
  Hassani-Gangaraj, M., Veysset, D., Nelson, K. A., Schuh, C. A.
  2017; 119 (17): 175701

- **Molecular influence in high-strain-rate microparticle impact response of poly(urethane urea) elastomers** *POLYMER*
  Veysset, D., Hsieh, A. J., Kooi, S. E., Nelson, K. A.
  2017; 123: 30-38

- **Acoustical breakdown of materials by focusing of laser-generated Rayleigh surface waves** *APPLIED PHYSICS LETTERS*
  Veysset, D., Maznev, A. A., Veres, I. A., Pezeril, T., Kooi, S. E., Lomonosov, A. M., Nelson, K. A.

2017; 111 (3)

- **Interferometric analysis of laser-driven cylindrically focusing shock waves in a thin liquid layer** *SCIENTIFIC REPORTS*
  Veysset, D., Maznev, A. A., Pezeril, T., Kooi, S., Nelson, K. A.
  2016; 6: 24
- **Dynamics of supersonic microparticle impact on elastomers revealed by real-time multi-frame imaging** *SCIENTIFIC REPORTS*
  Veysset, D., Hsieh, A. J., Kooi, S., Maznev, A. A., Masser, K. A., Nelson, K. A.
  2016; 6: 25577
- **Laser-induced versus shock wave induced transformation of highly ordered pyrolytic graphite** *APPLIED PHYSICS LETTERS*
  Veysset, D., Pezeril, T., Kooi, S., Bulou, A., Nelson, K. A.
  2015; 106 (16)
- **RUPTURE MECHANISM FOR THIN SHELLS BASED ON ULTRASOUND ACTIVATION FOR SUBCUTANEOUS CONTROLLED DRUG DELIVERY SYSTEMS**
  Curi, S., Veysset, D., Balan, R., Kooi, S., Nelson, K. A., Elman, N. M., D'Hers, S.
  edited by Onate, E., Oliver, Huerta, A.
  INT CENTER NUMERICAL METHODS ENGINEERING.2014: 778-786
- **High strain rate deformation of layered nanocomposites** *NATURE COMMUNICATIONS*
  Lee, J., Veysset, D., Singer, J. P., Retsch, M., Saini, G., Pezeril, T., Nelson, K. A., Thomas, E. L.
  2012; 3: 1164
- **Photoacoustic determination of the speed of sound in single crystal cyclotrimethylene trinitramine at acoustic frequencies from 0.5 to 15 GHz (vol 110, 113513, 2011)** *JOURNAL OF APPLIED PHYSICS*
  Johnson, J. A., Manke, K. J., Veysset, D. G., Maznev, A. A., Ramos, K. J., Hooks, D. E., Nelson, K. A.
  2012; 111 (8)
- **INTERFEROMETRIC ANALYSIS OF CYLINDRICALLY FOCUSED LASER-DRIVEN SHOCK WAVES IN A THIN LIQUID LAYER**
  Veysset, D., Maznev, A. A., Saini, G., Kooi, S. E., Pezeril, T., Nelson, K. A.
  edited by Elert, M. L., Buttler, W. T., Borg, J. P., Jordan, J. L., Vogler, T. J.
  AMER INST PHYSICS.2012
- **Photoacoustic determination of the speed of sound in single crystal cyclotrimethylene trinitramine at acoustic frequencies from 0.5 to 15 GHz** *JOURNAL OF APPLIED PHYSICS*
  Johnson, J. A., Manke, K. J., Veyssett, D. G., Maznev, A. A., Ramos, K. J., Hooks, D. E., Nelson, K. A.
  2011; 110 (11)
- **Direct Visualization of Laser-Driven Focusing Shock Waves** *PHYSICAL REVIEW LETTERS*
  Pezeril, T., Saini, G., Veysset, D., Kooi, S., Fidkowski, P., Radovitzky, R., Nelson, K. A.
  2011; 106 (21): 214503