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PUBLICATIONS AND PRESENTATIONS

Google Scholar: https://scholar.google.com/citations?user=drAE3qEAAAAJ

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SCOPUS: https://www.scopus.com/authid/detail.uri?authorId=16053382900

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This awarded patent describes the enhancement of the FDS process for joining multimaterial layers (a pertinent problem in current lightweight design and manufacturing approaches) through the application of electricity at the point of solid-state deformation. This approach, which overcomes the common limitations of material thickness and strength, leverages the phenomenon of direct softening of metals by electricity, which also relaxes implementation constraints of long-time-to-soften and energy inefficiency found with traditional heating methods.

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C124. Kerner, S., Gunasekar, S., Vedant, R.M., Krugh, M., Mears, L. (2021). "Parameterization of manual work in automotive assembly for wearable force sensing," *Proceedings of SME North American Manufacturing Research Conference (NAMRC49)*, Paper no. NAMRC49–80, virtual offering, June 22-26, 2021.

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C115. Wescoat, E., Summers, J., Mears, L. (2020). "The Effect of Assembly Instructions and Part Organization on Assembly Time and Process Variation," *Proceedings of ASME Manufacturing Science and Engineering Conference (MSEC2020)*, Paper no. MSEC2020–12994, Cincinnati, OH, USA, June 22–26, 2020 (conference cancelled, paper published directly).

C114. Allen, M., Mears, L. (2020). "Design and Signal Processing of a Wearable Shear Force Sensor Utilizing Capacitance and Resistance Modes," *Proceedings of ASME Manufacturing Science and Engineering Conference (MSEC2020)*, Paper no. MSEC2020–8435, Cincinnati, OH, USA, June 22–26, 2020 (conference cancelled, paper published directly).

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C111. Wescoat, E., Mears, L., Goodnough, J., Sims, J. (2020). "Frequency Energy Analysis in Detecting Roller Bearing Faults," *Procedia Manufacturing,* **48**: 980–991.

C110. Grimm, T., Mears, L. (2020). "Investigation of a Radial Toolpath in Single Point Incremental Forming," *Procedia Manufacturing*, **48**: 215–222.

C109. Grimm, T., Mears, L. (2020). "Effect of Power Supply Type on the Electroplastic Effect," *Proceedings of 48th SME North American Manufacturing Research Conference (NAMRC48)*, Paper no. NAMRC48–41, Cincinnati, OH, USA, June 22–26, 2020 (conference cancelled, paper published directly).

C108. Grimm, T., Mears, L. (2019). "Experimental Investigation of Scallop Removal Using Friction Stir Processing and Complex Toolpath," *Proceedings of ASME International Mechanical Engineering Conference and Exposition*, Paper no. IMECE2019–11375, Salt Lake City, UT, USA, Nov. 11–14, 2019.

C107. Grimm, T., Mears, L. (2019). "Numerical Determination of Unconstrained Area Effect on Springback in Incremental Forming of 5052–H32 Aluminum," *Proceedings of ASME International Mechanical Engineering Conference and Exposition*, Paper no. IMECE2019–11255, Salt Lake City, UT, USA, Nov. 11–14, 2019. **(winner of Honorable Mention, Outstanding Paper Award, Advanced Manufacturing track)**

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C105. Grimm, T., Mears, L. (2019). "Experimental Investigation of a Backing Sheet Stiffener in Incremental Forming of Polycarbonate," *Proceedings of ASME International Mechanical Engineering Conference and Exposition*, Paper no. IMECE2019–11231, Salt Lake City, UT, USA, Nov. 11–14, 2019.

C104. Krugh, M., Vedant, R., Garimella, R., Baburaj, A., Wescoat, E., Mears, L. (2019). "Associate Finger Engagement During Manual Assembly in Automotive Production for Smart Wearable Systems," *Procedia Manufacturing*, **39**: 251-259. doi: 10.1016/j.promfg.2020.01.332

C103. Allen, M., Wescoat, E., Mears, L. (2019). "Optimal Path Planning for Image Based Visual Servoing," *Procedia Manufacturing*, **39**:325-333. doi: 10.1016/j.promfg.2020.01.364

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C101. Vedant, R., Krugh, M., Mears, L. (2019). "Measuring Finger Engagement During Manual Assembly Operations in Automotive Assembly," *Procedia Manufacturing*, **34**:1005-1009. doi: 10.1016/j.promfg.2019.06.095

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C098. Baskaran, S., Akhavan Niaki, F., Tomaszewski, M., Gill, J.S., Chen, Y., Jia, Y., Mears, L., Krovi, V. (2019). "Digital Human and Robot Simulation in Automotive Assembly using Siemens Tecnomatix Process Simulate: A Feasibility Study," *Procedia Manufacturing*, **34**:986-994. doi: 10.1016/j.promfg.2019.06.097 **(winner of NAMRC47 Student Research Presentation Award)**

C097. Varma, A., Absar, S., Skovron, J., Ruszkiewicz, B., Abke, T., Mears, L., Choi, H., Zhao, X. (2018). "Thermal-Mechanical Numerical Modeling of the Friction Element Welding Process," *Proceedings of ASME Manufacturing Science and Engineering Conference (MSEC2018)*, Paper No. MSEC2018–6692, Texas A&M University, USA, June 18 – 22, 2018.

C096. Pleta, A., Akhavan Niaki, F., Mears, L. (2018). "A Comparative Study on the Cutting Force Coefficient Identification between Trochoidal and Slot Milling," *Procedia Manufacturing*, **26**:570–579, doi:10.1016/j.promfg.2018.07.067 **(First runner up, SME North American Manufacturing Research Conference Student Presentation Competition)**

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C095. Joshi, N., Singh, S., Krugh, M., Mears, L. (2018). "Background Noise Mitigation of Dual Microphone System for Defect Detection in Electrical Cable Connection," *Procedia Manufacturing*, **26**:1287-1295. doi: 10.1016/j.promfg.2018.07.139

C094. Ruszkiewicz, B., Mears, L. (2018). "Investigation of the Electroplastic Effect through Nominally Equal Energy Deformation," *Proceedings of ASME Manufacturing Science and Engineering Conference (MSEC2018)*, Paper No. MSEC2018–6250, Texas A&M University, USA, June 18 – 22, 2018.

C093. Absar, S., Ruszkiewicz, B., Skovron, J., Mears, L., Abke, T., Zhao, X., Choi, H. (2018). "Temperature Measurement in Friction Element Welding Process with Micro Thin Film Thermocouples," *Procedia Manufacturing*, **26**:485-494. doi: 10.1016/j.promfg.2018.07.057

C092. McGee, E., Krugh, M., McGregor, J., Mears, L. (2017). "Designing for Reuse in an Industrial Internet of Things Monitoring Application," *Proceedings of 2nd Workshop on Social, Human, and Economic Aspects of Software*, Salvador, Brazil, 29–31 May 2017. doi: 10.1145/3098322.3098323

C091. Akhavan Niaki, F., Ul Haq, A., Djurdjanovic, D., Mears, L., Li, L. (2017). "Process and Operations Control in Modern Manufacturing," *Proceedings of ASME 12th Int'l Conference on Manufacturing Science and Engineering (MSEC2017)*, Paper No. MSEC2017–3104, Los Angeles, California, June 4 – 8, 2017.

C090. Pleta, A., Mears, L. (2017). "Investigation of Chip Thickness and Force Modelling of Trochoidal Milling," *Procedia Manufacturing*, **10**:612–621. doi:10.1016/j.promfg.2017.07.063

C089. Krugh, M., McGee, E., McGee, S., Mears, L., Ivanco, A., Podd, K.C., Watkins, B. (2017). "Measurement of Operator-Machine Interaction on a Chaku-Chaku Assembly Line," *Procedia Manufacturing*, **10**:123-135. doi: 10.1016/j.promfg.2017.07.039

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C087. Karumatt, N., Ruszkiewicz, B., Mears, L. (2017). "Electrically Assisted Drilling of USIBOR 1500 Boron Steel And Its Implications for Electrically Assisted Manufacturing," *Proceedings of ASME 12th Int'l Conference on Manufacturing Science and Engineering (MSEC2017)*, Paper No. MSEC2017–3046, Los Angeles, California, June 4 – 8, 2017.

C086. Ruszkiewicz, B., Gendreau, E., Akhavan Niaki, F., Mears, L. (2017). "Modeling the Electroplastic Effect in Electrically-Assisted Drilling of Mild Steel," *Proceedings of ASME 12th Int'l Conference on Manufacturing Science and Engineering (MSEC2017)*, Paper No. MSEC2017–2766, Los Angeles, California, June 4 – 8, 2017.

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C085. Feng, L., Mears, L., Pisu, P., Schulte, J. (2017). "Nonlinear Parameter Estimation in a Typical Industrial Air Handler Unit," *Proceedings of ASME 12th Int'l Conference on Manufacturing Science and Engineering (MSEC2017)*, Paper No. MSEC2017–2994, Los Angeles, California, June 4 – 8, 2017.

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