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“Additively Printed Electronics Components Using Aerosol Jet Printing; Processing and Performance Assessment”

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Quick Register: <https://bit.ly/2GrA53k> | Zoom link provided after registration.



Printed Flexible Hybrid Electronics (FHE) are an integration of conventional silicon-based electronics and printing techniques on compliant substrates. This innovative integration has led to many advantages including, cost effectiveness, rapid fabrication, roll-to-roll fabrications, and has enabled new materials with new functionalities. Such promising area has led to many applications including wearable health monitoring, smart packaging, solar cells, OLED, and display, IoT, defense, automotive, and communication. Common printing techniques for FHE fabrication include screen printing, inkjet printing, precision dispensing, and aerosol jet printing (AJP), depending on many factors including ink properties. Among these, AJP is probably the most attractive for depositing functional components/circuits due to many advantages including printability of fine features down to 10 μm trace width and spacing, large stand-off distances, a large ink matrix, and design flexibility.

This talk is part of practical and fundamental research on application of AJP for fabricating electronics components on flexible polymer, rigid conventional PCB, and ceramic substrates for FHE various applications. In particular, the effect of the AJP printing process and sintering parameters on the performance of FHE components on flexible polymer substrates for RF and wearable monitoring applications will be presented. In addition, characterization of aerosol jet printed electronics components on ceramic substrates for hypersonic applications will be discussed.

Mohammed Alhendi is a PhD candidate in the Department of Systems Science and Industrial Engineering (SSIE) at the State University of New York at Binghamton. Mohammed Alhendi is a graduate research assistant at the Center for Advanced Microelectronics Manufacturing (CMM). CMM is the New York's Node for the NextFlex Manufacturing USA. Mohammed Alhendi has an undergraduate degree in Biomedical Engineering and master's degree in Mechatronics Engineering from Jordan University of Science and Technology. Mohammed Alhendi research interest is Flexible Hybrid Electronics processing, characterization, performance assessment, and reliability analysis.