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**Ondrus et al.**

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(54) **METHOD FOR ROBOTICALLY APPLYING LARGE VOLUMES OF STRUCTURAL FOAM WITHIN AUTOMOTIVE APPLICATIONS**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 385 days.

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(57) **ABSTRACT**

(51) **Int. Cl.**  
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An innovative robotic foam application process that integrates system communications, non-contact vehicle insertion point locations, and applications controls to accurately dispense a two-component structural foam at a high volume and flow rate. The process begins by first inserting a baffle within the support structure. After an electrocoat application and bake, the baffles expand and are sealed within the support structure to form cavities having a fill hole. A hydraulic driven robotic dispensing system equipped with a high-pressure static mixer senses the respective fill hole, moves a robotic arm to a location sensed, and injects a high volume of mixed two-component viscous material within each of the respective located fill holes at a high fill rate. After dispensing, the viscous material undergoes an exothermic curing reaction to cure and is expanded to substantially fill each cavity.

(52) **U.S. Cl.** ..... **156/79; 156/78; 264/45.5; 264/45.9; 264/46.7**

(58) **Field of Classification Search** ..... None  
See application file for complete search history.

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**7 Claims, 4 Drawing Sheets**

