



Case Study

New Polymer Material Development

New Material Development keeps \$50 million project on Schedule

Client Situation:

A key part of a new mainframe computer development project was the design and development of a complex multilayer printed circuit board. The first prototype board was fabricated using existing materials and was found to be deficient in both electrical performance and manufacturing yields.

Client Problem:

During the drilling of the very high layer-count printed circuit board, microcracks were forming in the drilled holes. The cracks were a severe reliability problem in the final product. Additionally, the electrical requirements were not met with the current material. A new material with improved electrical properties and crack resistance was needed.

InnoCentrix Solution:

The material requirements necessitated the development of a new base polymer and a new modifier to decrease the cracking during drilling. One part of the team formulated the base polymer and a second group developed the thermoplastic modifier. An entirely new class of thermoplastic modifier was synthesized and a novel formulation developed for the base polymer. The modifier synthesis was scaled-up and process development completed to produce the new thermoplastic modified high performance thermosetting composite.

Client Benefit:

The team successfully completed a large scale manufacturing run only 6 months from project start. Enough in-spec product was made to allow the fabrication of all the boards necessary for the completion of the next phase of the qualification program. The timely development and delivery kept a \$50 million mainframe computer development project on-schedule. Nine US patents were issued on the composition of matter and applications for a wide variety of electronic packaging applications.

Testimonials

Associate Research Director, Fortune 100 Company –

"InnoCentrix has the ability to align business leaders, sales and marketing, and technologists to define a new product opportunity, develop a scientific approach, conceptualize, and lead the development and commercialization activities. In my 25 years of industrial research management, I encountered few who could do this as well as InnoCentrix."

Vice President of Technology, Fortune 100 Company

"I selected InnoCentrix because they have a strong focus on the commercialization process and the requirements to drive a research concept to a profitable business. This unique skill provides them with the leadership and courage to identify the key strategies for a business to grow and prosper."

Director of Marketing, Fortune 100 Company –

"InnoCentrix provided us with valuable insight into a high growth emerging market opportunity in electronic materials. They outlined the technical requirements to successfully enter the market and offered a detailed description of the material modifications and testing required. Their unique combination of technical and business expertise was extremely valuable to our team."