

Extending Moore's Law Through Advanced Packaging

Dr. Andrea Chacko

*Program Manager of Packaging Solutions
Brewer Science's Corporate R&D*



**Chemistry
Colloquium on
Semiconductor
Electronics
Packaging**

3:15 p.m.

Friday

**April 21 in 303
Schrenk Hall**

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for more information**

**MISSOURI
S&T**

Corporate R&D scientists of Brewer Science Inc, a globally well-known industry in Microelectronic Materials Manufacturing located in Rolla, will deliver three colloquia in Chemistry on 04/14, 04/21 and 04/28 at 3:15 pm in 303 Schrenk.

Undergraduate and graduate students across disciplines are invited to attend.

1/3: Introduction to Photolithography by Joyce Lowes

2/3: Extending Moore's Law Through Advanced Packaging by Andrea Chacko

3/3: New Material Needs in the Semiconductor Industry by Reuben Chacko

Abstract: For the past several decades, the semiconductor industry has been guided by Moore's law toward continual miniaturization of devices. Advances in photolithography and the shrinking of transistors have traditionally been the primary means of achieving improved performance. Now however, in addition to continued improvements in lithography, the development of advanced packaging is widely considered an essential key to enabling still smaller and faster devices with added functionality and reduced cost of ownership.

Many approaches for the packaging of semiconductors have been utilized, but all advanced packaging technologies rely on advanced materials to address the many challenges in achieving continued shrinking and improved performance of devices. This presentation will be an introduction to semiconductor packaging and highlight the advanced materials needed to address the growing challenges in the industry.

About the speaker: Andrea Chacko earned a PhD in Chemistry from the University of Massachusetts Amherst. She currently serves as Program Manager of Packaging Solutions within Brewer Science's Corporate R&D team. She leads several projects including the development of temporary and permanent materials for advanced semiconductor packaging applications. She began her career at Brewer Science in 2013 as an Industrial Postdoc and has also worked on high-temperature-stable materials and underlayers for extreme ultraviolet (EUV) lithography.