French cheese and sunscreen for high performance microprocessors

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One might wonder what do high performance microprocessors, French Cheese and Sunscreen have in common. Considering that porous materials have been used for more than 10 years to build active devices and that these materials will require some protection in the future, the comparison above is only a little stretch of our imagination. Indeed today, integration of porous low dielectric constant materials constitutes a major roadblock in the reliable manufacturing of back end of the line (BEOL) wiring for advanced microprocessors.[1] In this presentation, I will describe the two main issues preventing the reliable integration of Ultra low-k (ULK) materials: their low mechanical properties and high sensitivity to plasma induced damage (PID). I will also present the strategies that we have developed to address these challenges.[2-6]

References

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