

Perspectives of Graphene in Semiconductor Industry

Infineon Technologies AG, 93049 Regensburg, Germany

Graphene is a novel material which has attracted a lot of attention during the last years. Since the discovery of its electrical properties in 2004 the expectations on its possible applications have increased dramatically. The apparent hype makes it difficult for industry to realistically assess the technological implementation potential of graphene, so it has to be broken down into its components (Fig. 1).

Different indicators for this assessment, like public attention, expert opinions or patent analysis, yield inconsistent conclusions, so there is no simple answer for potential graphene users.

Against this background possible application drivers and fundamental obstacles from the semiconductor industry point of view, as graphene quality, CMOS compatibility and process integration issues, are discussed. In this context a consistent graphene supply quality turned out to be one of the most important requirements.

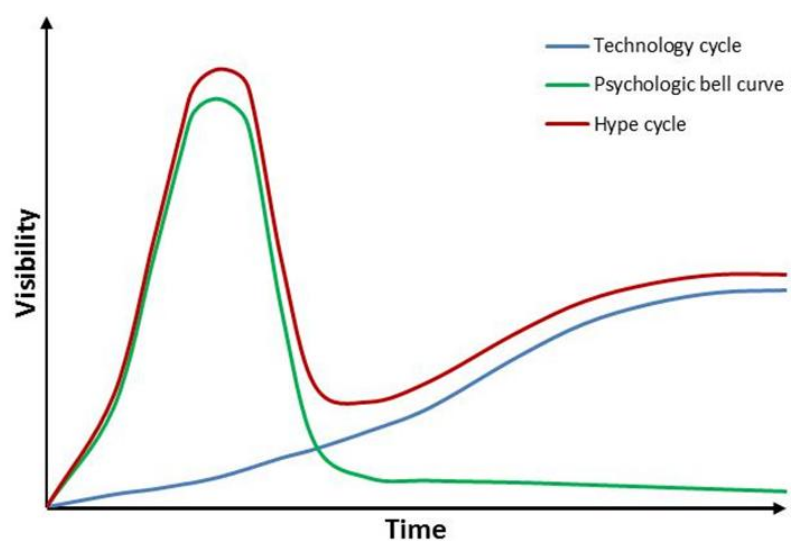


Figure 1. Breakdown of the hype cycle into its components.