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Metallic glue in ambient environment**Hanchen Huang**

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Metallic glue, one of The 20 Coolest Inventions of 2016 selected by the Interesting Engineering magazine and covered by ~200 media reports in 2016, is derived from discoveries of fundamental engineering science. This presentation starts from the scientific discovery of new diffusion mechanisms, identification of a deficiency in the classical crystal growth theory, formulation of analytical or closed-form theories of nanorod growth and experimental realization of the smallest and well-spaced nanorods under the guidance of the analytical theories. With the scientific foundation, this presentation then introduces the first metallic glue technology “MesoGlue 1.0 and 1.1” that is based on the smallest and well-spaced nanorods and the second metallic glue technology “MesoGlue 2.0” that is based on nanoparticles and is much cheaper. Finally, the presentation touches on the commercialization of the metallic glue.

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