

Diffusion Pathways for ATP-Funded Photonics Technologies

*Highlights from Presentation on “Diffusion Pathways for Photonics Technologies”
by Watkins and Schlie*

- **Photonics technologies are enabling technologies in which light and electronics are combined to enhance performance. Applications include:**
 - Communications (fiber optics)
 - Computers (displays, storage devices, scanners)
 - Manufacturing (laser machining, sensors)
 - Medical (laser surgery, imaging, biophotonics)
- **Photonics industry is large and growing rapidly.**
 - Photonics industry had worldwide sales of about \$150B in late 1990s, comparable in size to the semiconductor or aircraft industries.
 - Photonics market grew at about 20 percent per year in the 1990s.
 - Market projections indicate that growth is accelerating.
- **Diffusion within this emerging technology area depends heavily on personal communications.**
 - Geographic and social distance leads to clustering of diffusion.
 - Universities are often nodes of diffusion.
- **Diffusion of Displaytech’s ATP-funded technology is strongly tied to the University of Colorado and strongly concentrated geographically.**
 - Displaytech, which makes microdisplays or “displays on a chip,” was founded in 1984 on the basis of technology developed at University of Colorado, Boulder.
 - 25 of 32 Displaytech patents resulted from projects that received federal funding.
 - 25 percent of patent citations to Displaytech patents come from companies with known links to University of Colorado.
 - One-third of patent citations to Displaytech by U.S. companies are from companies in Colorado; another one-third of patent citations to Displaytech by U.S. companies are from northern California.
 - Nearly half of all scientific publications citing Displaytech are by authors affiliated with University of Colorado.

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