



Electronics and Photonics Technology Office

## Why Are We Here?

- *Explore market opportunities and high priority technical barriers for components or devices utilizing organic electronic materials for future electrical and optical systems*
- *Better understand how ATP EPTO can be a vehicle to enhance future Organic Electronics development and manufacturing*
- *Assist American companies in competing in ATP solicitations*
- *Review existing ATP projects*
- *Guide ATP EPTO in determining its role in organic electronics R&D*



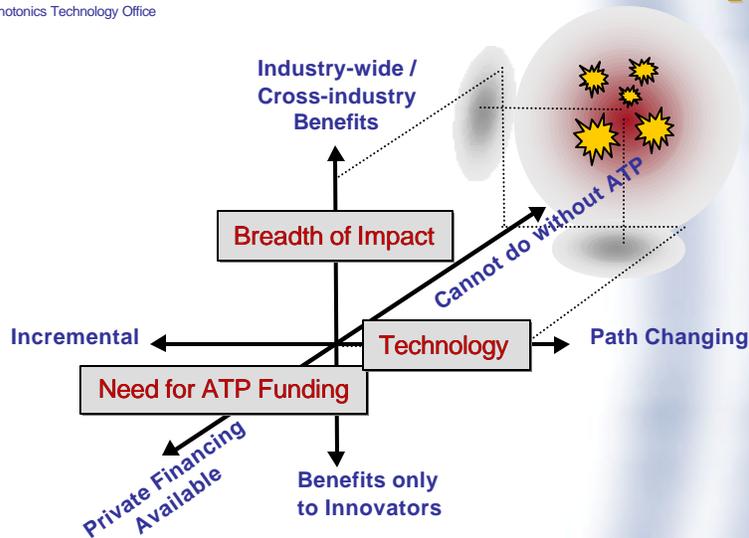
**1999 ATP National Meeting, November 15-17, 1999**

National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## The ATP "Sweet Spot"



**1999 ATP National Meeting, November 15-17, 1999**

National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## Who We Are

### EPTO Technical Managers

<b>Philip Perconti</b>	optoelectronics optics technologies	(301) 975-4263	philip.perconti@nist.gov
<b>John Albers</b>	microelectronics	(301) 975-2075	john.albers@nist.gov
<b>Gerald Ceasar</b>	power technologies	(301) 975-5069	geraldceasar@nist.gov
<b>Carlos Grinson</b>	optoelectronics optics technologies	(301) 975-4448	carlos.grinson@nist.gov
<b>Thomas Lettieri</b>	optics technology optoelectronics	(301) 975-3496	thomas.lettieri@nist.gov
<b>Purabi Mazumdar</b>	microelectronics	(301) 975-4891	purabi.mazumdar@nist.gov
<b>Michael Schen</b>	microelectronics organic electronics	(301) 975-6741	michael.schen@nist.gov
<b>Elissa Sobolewski</b>	RF electronics	(301) 975-3620	elissa.sobolewski@nist.gov

[www.atp.nist.gov/epto](http://www.atp.nist.gov/epto)



**1999 ATP National Meeting, November 15-17, 1999**

National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## If You Wish to Compete



- *Use every opportunity to discuss, plan, and distill your ideas*
- *When doubt or questions arise, call EPTO*
- *Send us your pre-proposals for evaluation and feedback*
- *Begin your proposal planning NOW!*

**Industry Leadership is Essential!**



**1999 ATP National Meeting, November 15-17, 1999**

National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



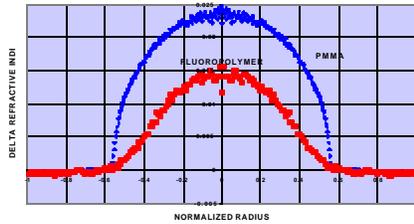
Electronics and Photonics Technology Office

# What is Organic Electronics

- Innovative organic materials and process technologies for future electrical / optical devices or components that participate in or are essential to the functions that occur within electrical or optical systems
- Functions include: imaging or patterning, logic, memory, interconnection, power or sources, display or illumination, field protection or confinement, sensing, actuating, etc.



GRADED INDEX PLASTIC OPTICAL FIBERS



- Supports ...  microelectronics and photonics manufacturing;  power technologies;  large-area-, disposable-, and molecular-electronics;  MEMS;  smart structures, and;  trends towards broader integration of functions within electrical/optical systems



**1999 ATP National Meeting, November 15-17, 1999**

National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## How to Write a Good ATP Proposal

*An Overview of the Proposer's Kit*

**Barbara Bird, Business Consultant**

*Electronics and Photonics Technology Office*

Ph: (301) 975-3105      [barbara.bird@nist.gov](mailto:barbara.bird@nist.gov)



**1999 ATP National Meeting, November 15-17, 1999**

National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## Telling the ATP Business Story

- *Economic benefits*
- *Need for ATP funding*
- *Commercialization pathway*



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



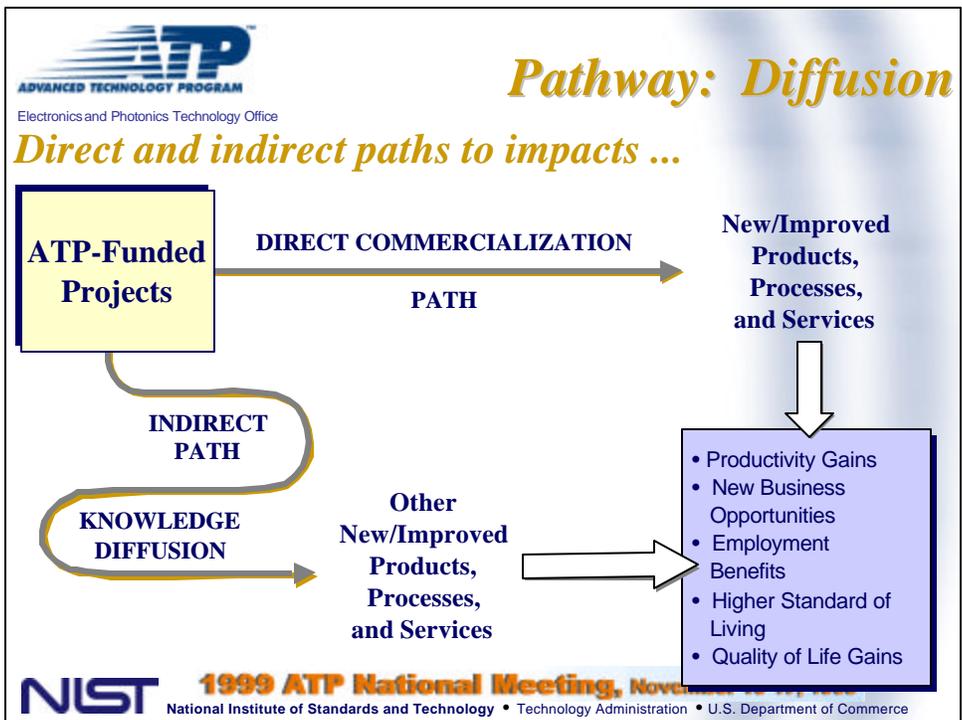
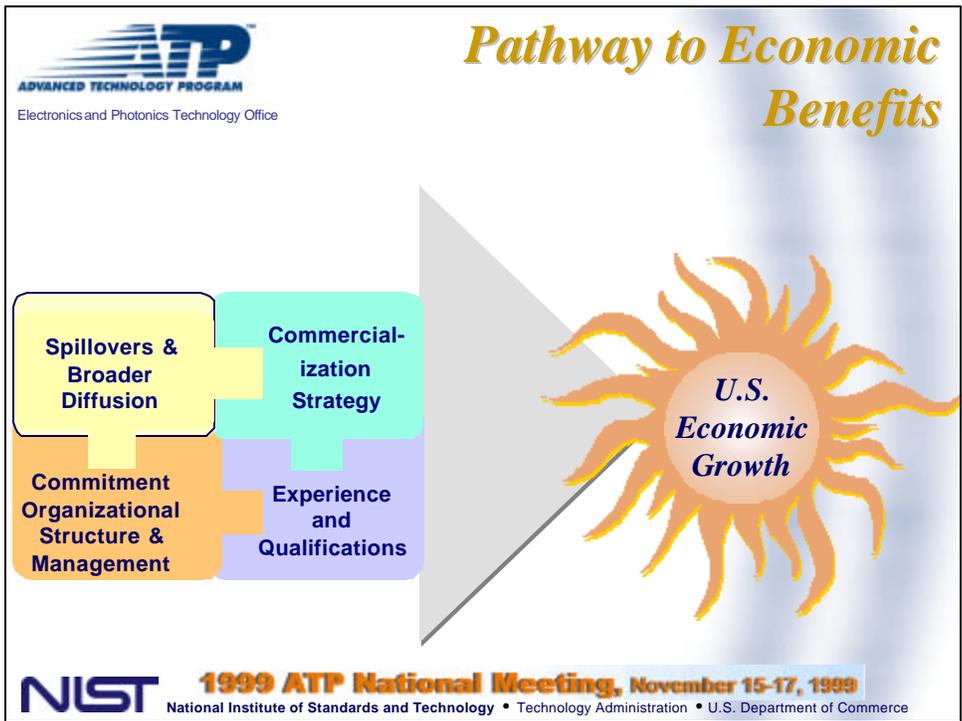
Electronics and Photonics Technology Office

## ATP: Creating Economic Growth

- *Market-driven R&D*
- *Products in the see-able future*
- *R&D plans that serve those products and markets*



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce





## *Economic Benefits: What to Cover*

- *Revenues—Net additions to the economy*
- *Employment—Net new jobs*
- *Technology spillover—Who benefits outside the project*



## *Telling the Benefit Story*

- *Market size and growth*
- *Technology benefits*
  - Pathbreaking
  - Infrastructural
  - Multi-use
  - Payoffs
- **Market opportunity matrix**
- **Market share over time**

**ATP**  
ADVANCED TECHNOLOGY PROGRAM  
Electronics and Photonics Technology Office

**Pathway:**  
**Commercialization**  
*Identify Potential Applications of Your Technology*

**Rich Technology Platform**

**NIST** **1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce

**ATP**  
ADVANCED TECHNOLOGY PROGRAM  
Electronics and Photonics Technology Office

**Market Opportunity Matrix:**  
**One Example**

Segment	Size 1999	Growth 1999-2005	Competitors	Advantages of Our Product/Technology	Our Market Share by 2005

**NIST** **1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## *Need for ATP*

- *Why public funds?*
- *Why not self-funding?*
- *Why not private funding?*
- *What efforts have you made outside ATP?*
- *What will happen without ATP?*



**1999 ATP National Meeting, November 15-17, 1999**

National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## *Timing Issues*

- *Time frames appropriate to ATP*
- *Why now?*
- *Sources of urgency*
- *What will the world look like when project is completed?*
- *How long after completion to first sale?*



**1999 ATP National Meeting, November 15-17, 1999**

National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## Commercialization Pathway

- *Initial applications and target markets*
  - Prioritize and show size of targets
  - Timing and cost of pathway
  - Competitors
- *Strategic alliances, marketing strategies, licensing, intellectual property protection*
- *Business and market risks*
- *Link to economic benefits*



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## Commercialization Pathway

- *How to play the global game with large foreign players*
  - Find and define a niche where they don't play or don't play well



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## *Initial Application Details*

- *Who, what, when, and at what cost?*
- *What is product or service?*
- *Who will bring to product? Who will take to market? Who will sell? Who will buy?*
- *When will revenues start? How will they grow over three years?*
- *Link to economic benefits, market size, etc.*



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## *Initial Application Details*

- *Commitments from alliances and partners*
  - In defining project directions
  - As commercialization partners
  - As technology beneficiaries
  - As on-going project review board members
- *Strong letters help, weak ones do not*



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce

## *How to Write a Good ATP Proposal*

*Some Additional Nuts and Bolts*

## *ATP Funds Low Risk Business and High Risk Technology*

*Goal: Deliver Commercial Success*

*Two Pathways: Commitment, Management*



Electronics and Photonics Technology Office

## *How to Lower Risk Through Commitment*

- *Involve customers and end users*
  - Proposal development
  - Internal technical review board
  - Commercialization plan
- *Show interest/commitment from investors*



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## *How to Lower Risk Through Commitment*

- *Document commitment from commercial alliances*
- *Show how this R&D supports your firm's core competence*
- *Show commitment from your firm's top management*
- *Document financial stability and strength*



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## *How to Lower Risk Through Management*

- *Show project management structure serves technical plan and management oversight*
- *Assemble logical team of partners, alliances & subcontractors*



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## *How to Lower Risk Through Management*

- *Recruit and list managers with commercialization experience*
- *Assemble board of directors/advisors*
  - Experienced in application areas and commercialization
  - Committed to long haul



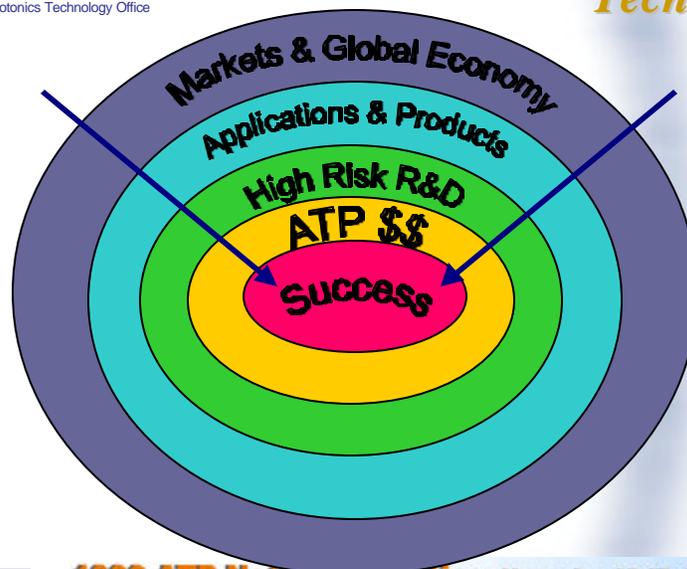
**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce

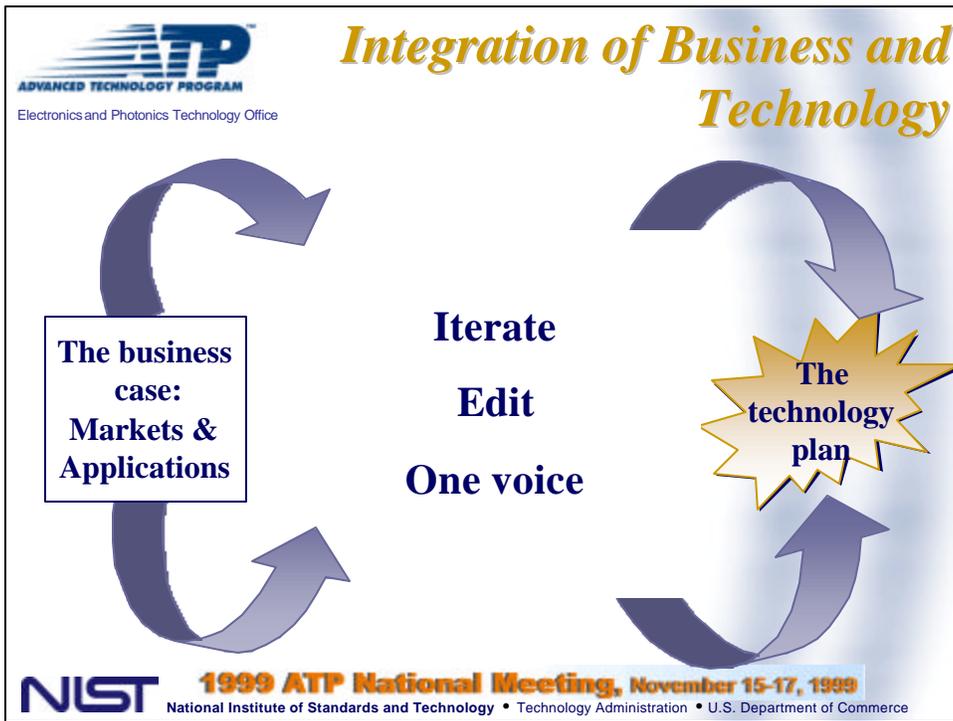
## Integration of Business and Technology

- Markets & global economy
- Applications & products
- High risk R&D



## Integration of Business and Technology





**ATP**  
ADVANCED TECHNOLOGY PROGRAM  
Electronics and Photonics Technology Office

## The Successful ATP Proposal

- *Remember the spirit of ATP requirements*
  - Economic benefits
  - Need for ATP
  - Commercialization focus
- *Use appropriate level of detail*
  - Quantify benefits and markets
  - Evidence of commitment within and from outside
  - Management time & talent on the business side

**NIST** 1999 ATP National Meeting, November 15-17, 1999  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## Common Proposal Weaknesses

- *Lack of sufficient detail for peer review*
  - How you will reach technical objectives
  - What's innovative about the approach
  - Why a risky technical approach is needed
- *Unsupported assertions that project meets ATP's criteria*
- *Misses ATP's niche*
  - Low risk - product development, good engineering practice
  - Lacks demonstrated feasibility - Basic research



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## What's Next?

### **Industry Leadership is Essential!**



- Use every opportunity to discuss, plan, and distill your ideas
- When doubt or questions arise, call EPTO
- Send us your pre-proposals for evaluation and feedback
- Begin your proposal planning NOW!



**1999 ATP National Meeting, November 15-17, 1999**  
National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce



Electronics and Photonics Technology Office

## *Pre-Proposals*

### *Year-round submission ...*

- *Written feedback in approximately 2 weeks*
- *Pre-proposals can be submitted twice*
- *4 pages plus cover*
- *5 questions on technical and economic merit*



**1999 ATP National Meeting, November 15-17, 1999**

National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce