The role of academia in technology based innovation

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Research anticipated for academia Basic research

Pure basic research: curiosity-driven

- Not necessary beneficial to practical purpose
- But in very rarely, good findings/inventions leading innovation are produced by accident.
- Goal-oriented basic research:technology oriented
 - Four priority fields in Science & Technology basic plan
 - Even in such a clearly indicated area, the efficiency leading innovation is low.

-How to find a good research, and how to nourish it ?-



At the initial stage, funding should not be concentrated to neither particular research fields nor researchers, but distributed widely

Step-by-step selection and concentration of research group and Step-by-step raise of research maney

2. How to turn good research results/findings into innovation ?



 Single basic research result rarely leads to applied research, product develop. research successively.

Linear procession is a hindsight

⇒ In reality, failure & withdrawal, newly & re-challenge repeatedly

Environmental Technology using TiO₂ Photocatalysis

TiO₂



- Ceramic †il<mark>e</mark>
- Glass
- Plastics
- Metal
- Paper etc...

 Photo-induced decomposition of adsorbed compounds
 Photo-induced hydrophilic conversion of surface Self-cleaning, Anti-bacterial, Anti-fogging, Energy saving, Water/Air/Soil purification



History of TiO₂ Photocatalysis Research







Communication of research and market

Academia could provide a good platform for R&D community



Academia could serve as a hub of information exchange & knowledge creation !

Research community of photocatalysis analyzed by patent share relation

- University
- Natinal institute
- Industry



3. Role of University in Industry-Academic Collaboration

Questionnaire regarding the role of university in academia-industry collaborations.

To both researchers from industry and academia having experience of collaboration

Universities mislead the industry's true needs !!

Example	Company evaluation	University self- evaluation
Intellectual property	Low	
Regular discussion	High	Low

3. Role of University in Industry-Academic Collaboration

Neither the transfer of intellectual property nor accomplished technology, but the transfer of "research capability"

Platform of R&D community

- Cooperation from science to technology
- Hub of knowledge creation

Each industrial player benefits from learning and becomes heavy weight project leader

Field for nurturing talents for technology-based innovation

