

26th SEP 2016

**Strategy of
Environment Technology
And
Nano Technology Convergence
In KOREA**

**Korea Institute of Science and Technology
Center for Water Resource Cycle Research**

Sang-hyup LEE

Meaning of Convergence in KOREA

융합 (yung_(melt) hap_(sum))

Convergence

Fusion

Mix

Complex

**Level of
Water Treatment Technology
of KOREA**

almost 90%

Compared to Developed Countries

**Level of
Nano Technology
of KOREA**

almost 90%

Compared to Developed Countries

**Level of
Water Treatment Technology
And
Nano Technology Convergence
of KOREA**

$$90\% + 90\% = 180\%$$

$$90\% - 90\% = 0\%$$

$$90\% \times 90\% = 8,100\%$$

$$90\% / 90\% = 1\%$$

Personal Level of Water Treatment Technology And Nano Technology of KOREA

$$**90\% + 90\% = 90.9\%**$$

$$90\% - 90\% = 0\%$$

$$**90\% \times 90\% = 90.1\%**$$

$$90\% / 90\% = 1\%$$

**Big National Project of
Environment Convergence
Technology Development
in KOREA**

Department of Environment

From 2,009 To 2,016

Total 60,500,000 US\$

Important Performance

Top

among the projects

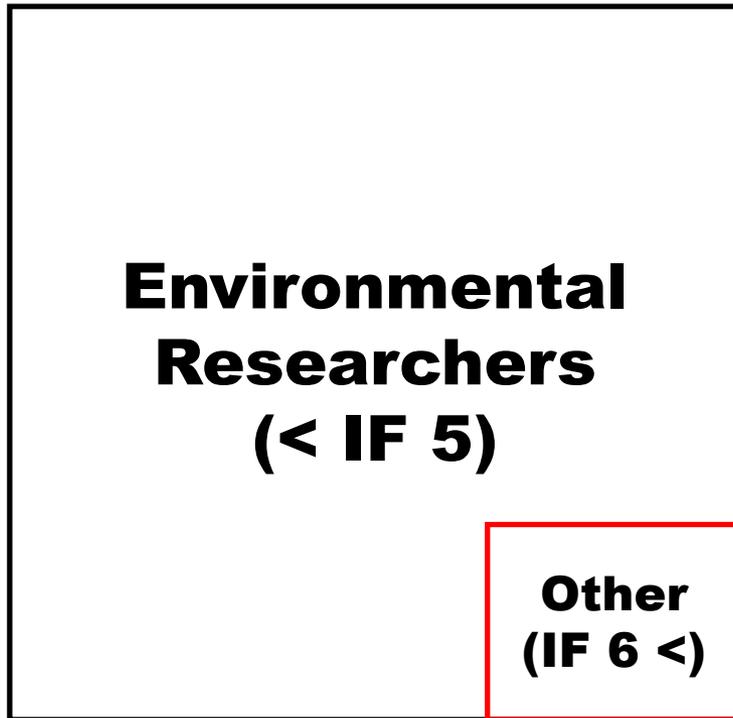
in DOE

6 times up

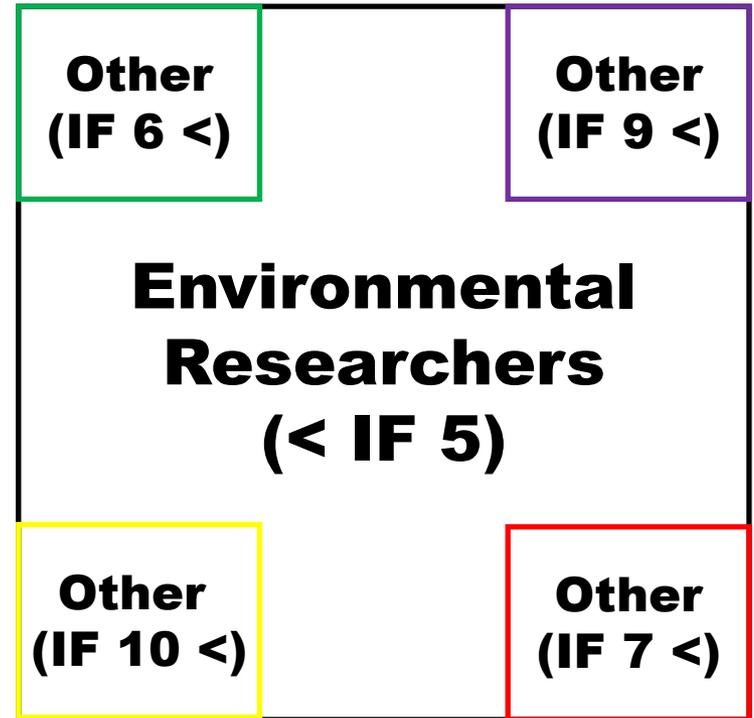
in Impact Factor

Why?

Composition of Participants



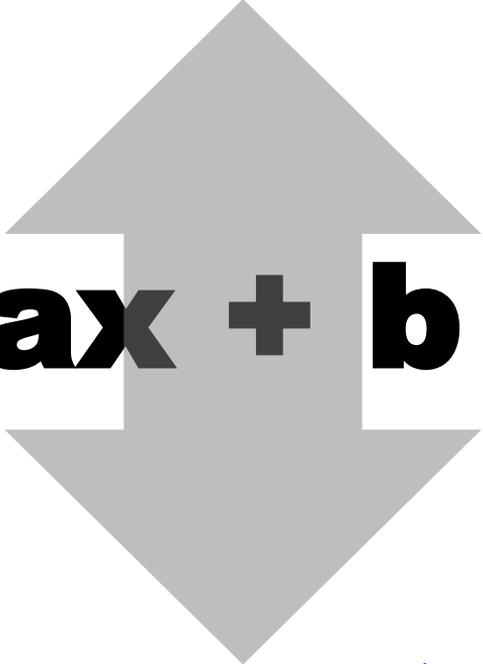
$$5 + 6 = 11$$



$$5 + 6 + 7 + 9 + 10 = 37$$

Question?

**Practicability / Applicability
to Polluted Environment**


$$\mathbf{F(x) = ax + b \quad (b=0)?}$$

High Impact Factor

Answer 1

Two Step(Basic -> Practical)

and

Severe Evaluation

Based on

**Practicability / Applicability
to Polluted Environment**

40% survival

Answer 2

Role of Environmental Engineers

Main Character

ET

“Period of Convergence Technology”

Captain

Main Character

$$ET + NT = ENT$$

$$ET + BT = EBT$$

$$ET + IT = EIT$$

Answer 3

Positive cooperation

NRF of KOREA

**High Environment Application Possibility
among Basic/Scientific Technologies**

Evaluation together

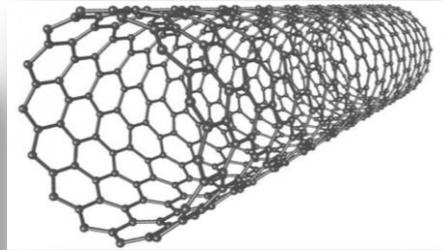
Research Funding

KEITI

(Korea Environment Industry & Technology Institute)

Our Strategy 1

Coordinator



Our Strategy 2-1

Visible Nano

**Nano
Technology**

=

Superman



Where is superman?



Our Strategy 2-2

Visible Nano



I am here!
I am Superman!
Look carefully, please.

**Nano
Technology**

=

**Nano
Superman**

Our Strategy 2-3

Visibility



**Too small
Can't find you**



**Are you really super?
Are you really OK?
Can you fight the strong enemy well?
Are you really friendly to human beings?
Are you really safe?**



For solution

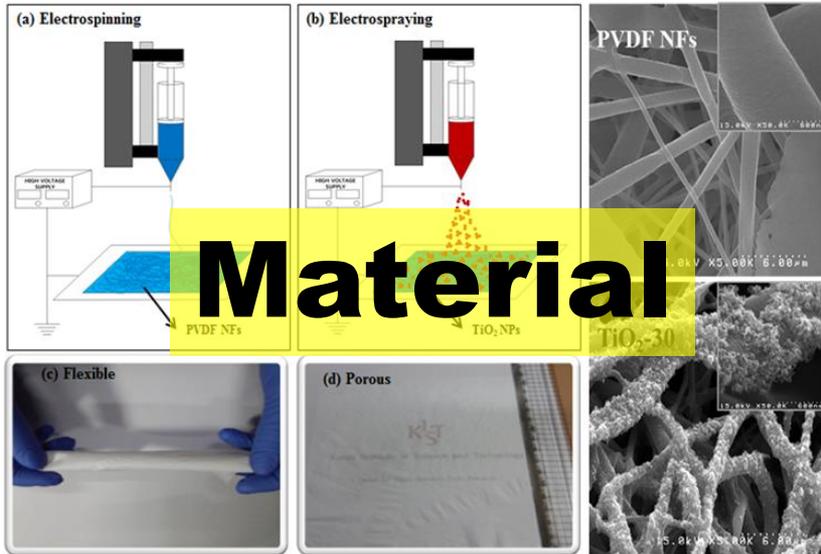
The answer is

an superman army



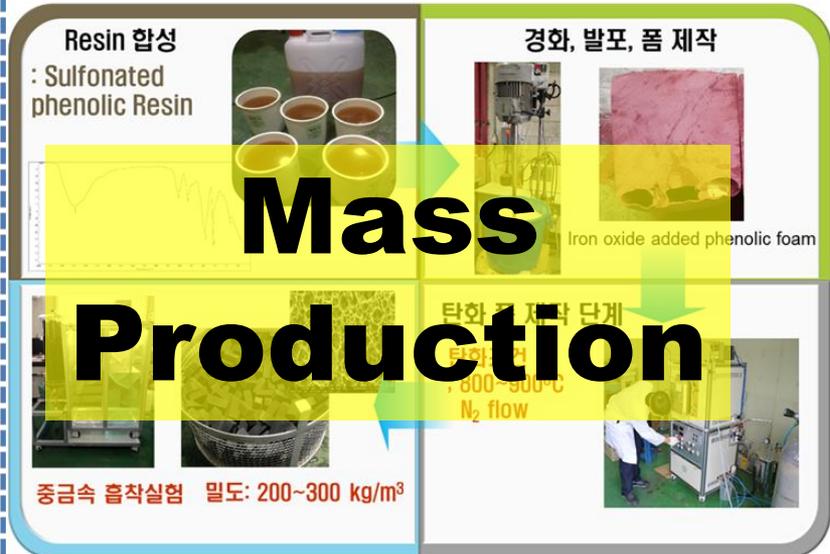
Main Results

전기방사 및 전기분사 기술을 이용한 PVDF-TiO₂ 하이브리드 광촉매



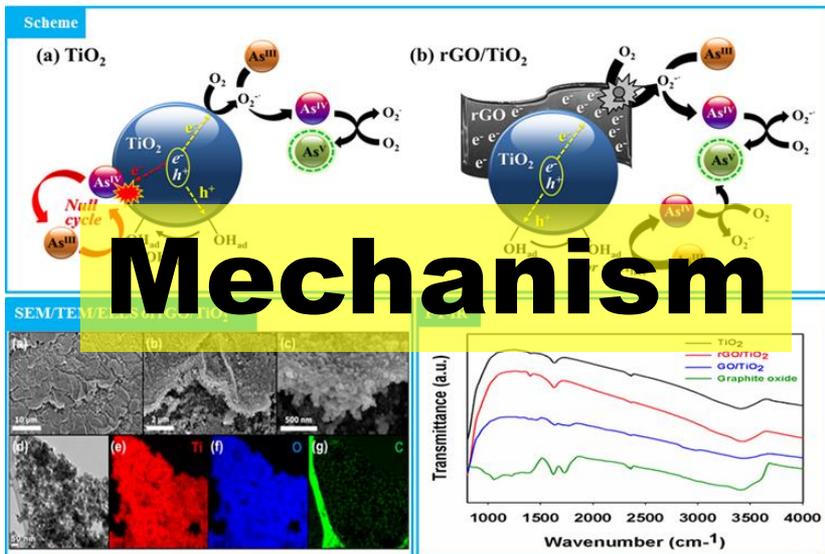
Material

나노기반 중금속 흡착 소재 양산화 기술 개발



Mass Production

그래핀을 이용한 귀금속 조촉매 대체 및 비소산화 메커니즘 규명



Mechanism

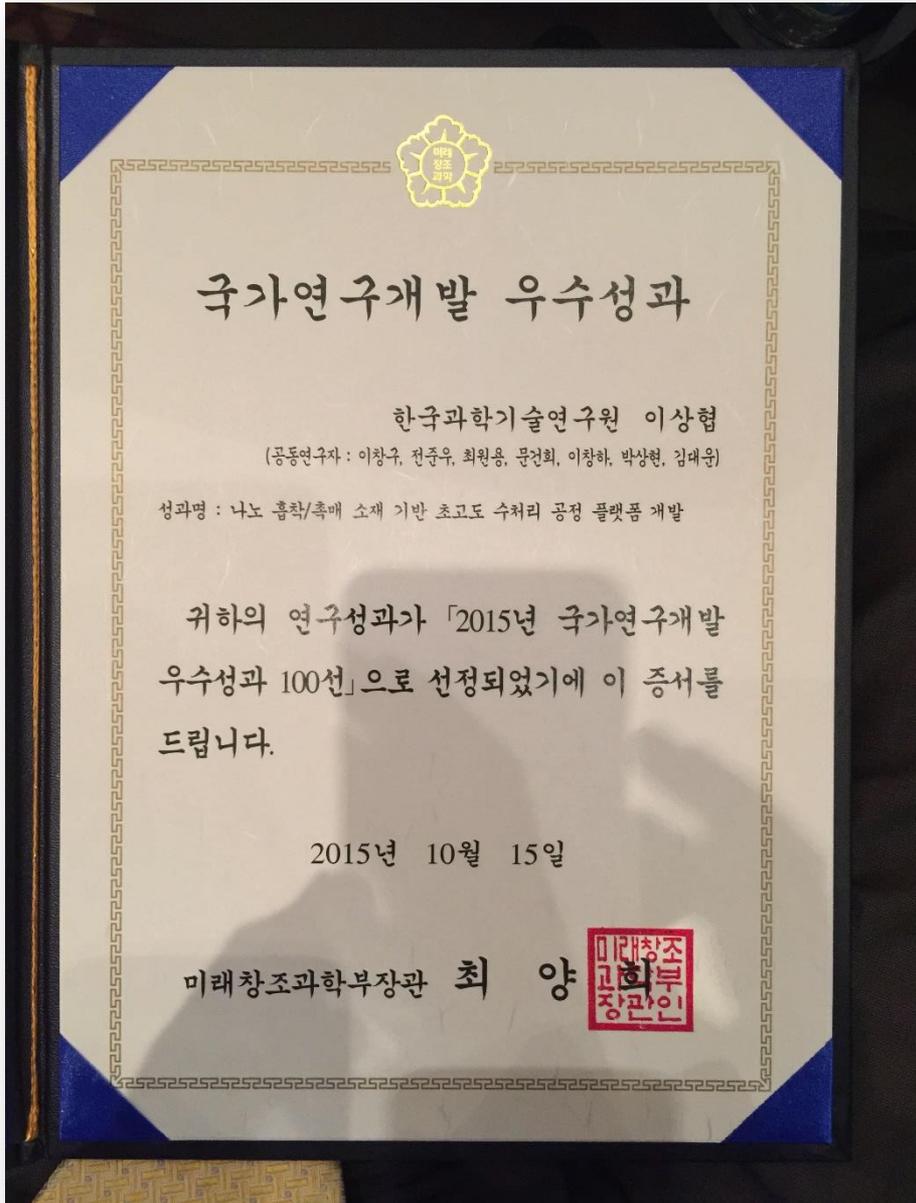
나노 흡착/촉매 소재 기반 수처리 공정 파일럿 플랜트 실용화 운전



Real wastewater

국립연구시설장비정보제공시스템 National Research Facilities Equipment Information	
시설명	국립연구시설장비정보제공시스템
시설종류	연구시설
시설주소	서울특별시 강남구 테헤란로 152
시설면적	1,000㎡
시설연도	2010년
시설상태	가동
시설주요기능	국립연구시설장비정보제공시스템 운영
시설관리자	국립연구시설장비정보제공시스템 운영팀
시설연락처	02-5521-1111
시설비밀번호	12345678
시설비밀번호	87654321
시설비밀번호	11223344
시설비밀번호	44332211
시설비밀번호	11111111
시설비밀번호	22222222
시설비밀번호	33333333
시설비밀번호	44444444
시설비밀번호	55555555
시설비밀번호	66666666
시설비밀번호	77777777
시설비밀번호	88888888
시설비밀번호	99999999
시설비밀번호	00000000

Award



2015 국가연구개발 우수성과 수여식 및 전시회

주요시

- 일 시 : 2015. 10. 15(목) 14:00 ~ 15:00
- 장 소 : 국립과학기술관 아울룸홀

시 간	내 용
14:00-14:02	개회 및 국민의례
14:02-14:07	축사
14:07-14:10	추진경과 보고
14:10-14:20	2015년 우수성과 시상식
14:20-14:30	장관보좌 수여 및 기념촬영
14:30-15:00	입증서 수여 및 기념촬영
15:00~	폐회 및 성과 전시회 관람

우수성과 전시
 • 일 시 : 2015. 10. 15(목) 14:00 ~ 10. 18(일) 17:00
 • 장 소 : 국립과학기술관 창조홀 및 로비
 * 평 일(10.16)은 휴무 예정입니다.



미래창조과학부
Ministry of Science, ICT and
Future Planning

Conclusion 1

ET

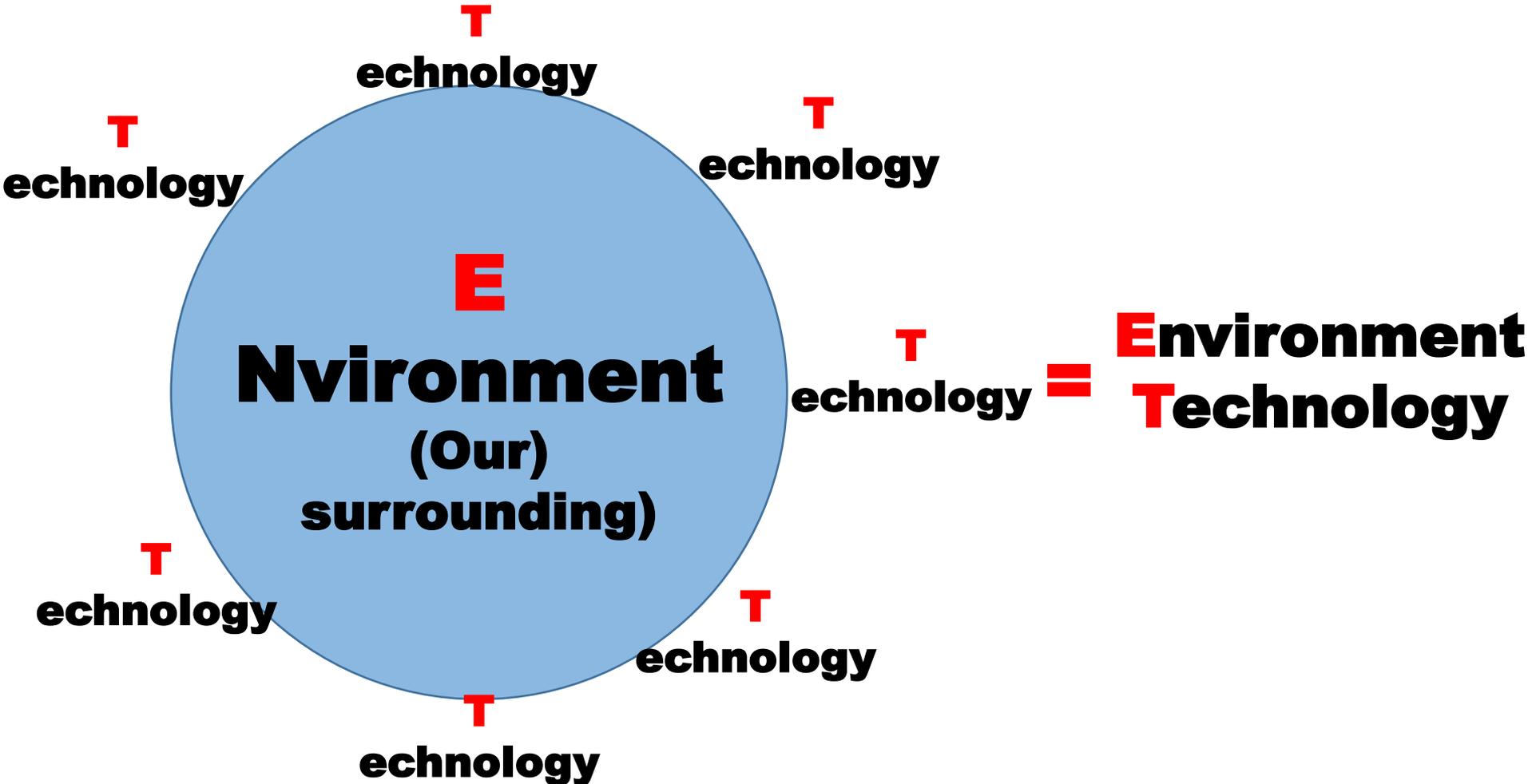


X

Environment
Technology

Conclusion 2

ET



Thank you for Listening

Questions or comment!