

- [ScienceWatch Home](#)
- [Inside This Month...](#)
- [Interviews](#)

- Featured Interviews
- Author Commentaries
- Institutional Interviews
- Journal Interviews
- Podcasts

Analyses

- Featured Analyses
- What's Hot In...
- Special Topics

Data & Rankings

- Sci-Bytes
- Fast Breaking Papers
- New Hot Papers
- Emerging Research Fronts
- Fast Moving Fronts
- Corporate Research Fronts
- Research Front Maps
- Current Classics
- Top Topics
- Rising Stars
- New Entrants
- Country Profiles

About Science Watch

- Methodology
- Archives
- Contact Us
- RSS Feeds



Interviews

Analyses

Data & Rankings

2010 : January 2010 - New Hot Papers : Maw-Kuen Wu on the Discovery of a New Fe-Based Superconductor

new hot papers - 2010

January 2010



Maw-Kuen Wu talks with *ScienceWatch.com* and answers a few questions about this month's New Hot Paper in the field of Physics.



Article Title: Superconductivity in the PbO-type structure alpha-FeSe

Authors: Hsu, FC;Luo, JY;Yeh, KW;Chen, TK;Huang, TW;Wu, PM;Lee, YC;Huang, YL;Chu, YY;Yan, DC;**Wu, MK**

Journal: *PROC NAT ACAD SCI USA*, Volume: 105, Issue: 38, Page: 14262-14264, Year: SEP 23 2008

* Acad Sinica, Inst Phys, Taipei 115, Taiwan.

* Acad Sinica, Inst Phys, Taipei 115, Taiwan.

* Natl Tsing Hua Univ, Dept Mat Sci & Engn, Hsinchu 30013, Taiwan.

* Duke Univ, Dept Phys, Durham, NC 27708 USA.

SW: Why do you think your paper is highly cited? Does it describe a new discovery, methodology, or synthesis of knowledge?

This paper describes the discovery of a new Fe-based superconductor which has the simplest structure among all the Fe-based superconductors. It also contains materials that are much easier to handle than those found in other iron-pnictide superconductors, so that it has attracted the attention of other research groups throughout the world who are involved in the study of this new and exciting class of materials.

Our paper describes, in great detail, the synthesis and physical properties of the newly discovered material.

SW: Would you summarize the significance of your paper in layman's terms?

There are several important points described in our paper:

1. The new class of Fe-based superconductors may also exist in other classes of materials, not limited to only pnictide.
2. The superconductivity observed in an Fe-based superconductor is closely related to the structural distortion observed at a temperature much higher than the superconducting transition temperature.
3. The material is much easier to handle, so that more research groups around the world are able to participate in the research of this new class of materials.

"I believe the discovery of this new class of Fe-based superconductors has already made an impact in the field..."

SW: How did you become involved in this research, and were there any problems along the way?

We have been working on transition chalcogenides for quite a while. The only problem, which is not a critical one, is how to better control the material stoichiometry in the synthesis process.

SW: Where do you see your research leading in the future?

We believe the research community will develop a better knowledge and more detailed information on FeSe and related compounds. And that these results will undoubtedly play a major role in the understanding of superconductivity in Fe-based superconductors.

SW: Do you foresee any social or political implications for your research?

I believe the discovery of this new class of Fe-based superconductors has already made an impact in the field, not only among members of the research community, but also to funding agencies worldwide.

Maw-Kuen Wu, Ph.D.

Director

Institute of Physics

Academia Sinica

Taipei, Taiwan

KEYWORDS: ELECTRONIC PROPERTIES; FE-OXYPNICTIDE; COMPOUND.



2010 : January 2010 - New Hot Papers : Maw-Kuen Wu on the Discovery of a New Fe-Based Superconductor