Writing Scientific Papers: Talent or Training?

Enrico TRAVERSA

WP International Research Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Tsukuba, Japan

The 7th NIMS Open Seminar: Writing Scientific Papers, Tsukuba, March 9, 2009

Should I accept the invitation?

- my experience in writing papers
- how I taught writing papers to my co-workers
- the importance of being talented, but also how training can improve writing skills
- the golden rules to write papers in different fields (from fuel cells to stem cells...)

Enrico TRAVERSA

PhD in Chemical Engineering, Univ. Rome La Sapienza

Academic positions

- 1988-1992 Assistant Professor (Ricercatore), Dept. Chemical Science and Technology, Univ. Rome Tor Vergata
- 1992-2000 Associate Professor of Materials Technology, Univ. Rome Tor Vergata
- 2000- date Full Professor of Materials Science and Technology, Univ. Rome Tor Vergata
- 2001- date Director of the Doctorate Course in Materials for Health, Environment and Energy, Univ. Rome Tor Vergata
- 2009- date Principal Investigator at WP International Research Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Tsukuba, Japan

ISI Web of Knowledge

- Published Items in Each Year
- Citations in Each Year

Results found: 211
Sum of the Times Cited: 2,668
Average Citations per Item: 12.72
h-index: 26
My first paper on ceramics:


The Mechanism of MgAl$_2$O$_4$ Spinel Formation from the Thermal Decomposition of Coprecipitated Hydroxides

G. Gusmano, P. Nunziante, E. Traversa

Dip. Scienze e Tecnologie Chimiche, II Università di Roma “Tor Vergata”, Via O. Raimondo, 00173 Roma, Italy

&

G. Chiozzini

Ist. Teoria e Struttura Elettronica, C.N.R., Area della Ricerca di Roma, Via Salaria Km 28.300, 00016 Monorotondo Stazione (ROMA), Italy

(Received 6 July 1990; accepted 25 July 1990)

It took me 9 months to write it!!!

"They sort of grow on you."

Like a delivery!
It was a learning experience

The paper was accepted without revisions:

Talent!

First meeting: Roma, September 1990

Prof. Yoshihiko Sadaoka

Visiting Matsuyama to write papers

Training!
Guidance and tutoring of students

- 22 Master Thesis Students
- 30 PhD Students
- 25 Post-Docs

Most of the students are not talented

Sometimes also the second draft is:

Checking their first draft of a paper is...
The PhD student has to learn how to write manuscripts by himself

- Writing papers force the student to understand his work.
- Never hire as a post-doc someone who did not write papers by himself (some good Professors like to write also for their students – do not trust).
- Professors have to guide and correct mistakes.
- Without talent, training can help.

Golden rules to write manuscripts

- You have to tell a story.
- Make clear why are you telling the story, what is your goal (the conclusions).
- Keep the story simple, do not try to tell too many things all together.
- Choose the figures first and check that you have all the pieces needed to support your story.
- Put your story in a context and make it appealing: write the background in the introduction.
- Write the paper, then write the abstract at the end, and finally go back to the conclusions and check that everything is sound.
Exercise of writing

- Writing novels: needs creativity and imagination
- Writing scientific papers: needs creativity, different kind of imagination, and logic
- You can develop your style also in writing scientific papers

Clarity of mind

- Both ideas and words should be straightforward
My Research Topics

- Corrosion
- Humidity sensors
- Semiconducting oxide gas sensors
- p-n heterocontacts
- Electrochemical gas sensors
- Solid oxide fuel cells
- Polymeric electrolyte membrane fuel cells
- Lithium ion batteries
- Solar cells
- Plastics recycling
- Nanostructured materials
- Hybrid materials
- Mesostructured materials
- Nanocomposites
- Diamond films
- Antibacterial/antifungi coatings and films
- Tissue engineering
- Nanotoxicology
- Drug delivery
- Thin films
- Thick films

194 citations

Ceramic sensors for humidity detection: the state-of-the-art and future developments

Enrico Traversa
Dipartimento di Scienze e Tecnologie Chimiche, Università di Roma “Tor Vergata”, via della Ricerca Scientifica, 00133 Rome, Italy
Received 15 September 1993; accepted 20 September 1994

75 citations

Ceramic thin films by sol-gel processing as novel materials for integrated humidity sensors

Enrico Traversa*, Giugliano Giuseppe, Angela Montemurro, Gabriella Guerini
Dipartimento di Scienze e Tecnologie Chimiche, Università di Roma “Tor Vergata”, via della Ricerca Scientifica, 00133 Rome, Italy
*Corresponding author. E-mail address: enrico.paloschi.uniroma1.it
1Department of Chemistry, University of Rome “La Sapienza”, Via della Ricerca Scientifica, 00185 Rome, Italy

Design of Electroceramics for Solid Oxides Fuel Cell Applications: Playing with Ceria

Vincenzo Esposito* and Enrico Traversa*
Dipartimento di Scienze e Tecnologie Chimiche, Università di Roma “Tor Vergata”, Roma, Italy

Design of BaZr0.8Y0.2O3–δ Protonic Conductor to Improve the Electrochemical Performance in Intermediate Temperature Solid Oxide Fuel Cells (IT-SOFCs)

A. D’Epifanio1, E. Fabbrini1, E. Di Bartolomeo1, S. Licoccia1, and E. Traversa
1 Department of Chemical science and technology, University of Rome “Tor Vergata”, I-00133 Rome, Italy
Received July 30, 2007, accepted December 14, 2007
In summary....
L’Elisir d’amore...

...does not exist.

どうも ありがとうございました