

Positions Available



**FACULTY
POSITIONS IN
MATERIALS
SCIENCE
UNIVERSITY
OF DELAWARE**

A tenure-track position in Materials Science is available. The Materials Science Program at Delaware is an interdepartmental degree-granting graduate program (M.S. and Ph.D.). The appointment is in the Department of Chemical Engineering and may be filled at any level. Preference will be given to candidates with research interests in technologically advanced materials. Duties include the teaching of undergraduate and graduate courses in materials and the development of a strong independent research program. Teaching in the area of specific materials expertise and in thermodynamics is expected. Materials research and teaching programs at Delaware include all major classes of materials.

Additional resources and interactions are available with the Institute of Energy Conversion (photovoltaic materials), the Center for Composite Materials and the Center for Catalytic Science and Technology, all of which have large block funding. Applicants should send resume, list of publications, a brief summary of research avenues, and names and addresses of three references to: **Prof. Jerold M. Schultz, Chairman, Materials Science Program, Colburn Lab, UNIVERSITY OF DELAWARE, Newark, DE 19716 by June 15, 1988.**

The University of Delaware is an Equal Opportunity Employer which encourages applications from qualified minority groups and women.

Coming in June

Guest Editor Jan F. Herbst of General Motors Research Laboratories leads a focus on magnetism and magnetic materials:

- High Resolution Imaging of Magnetization by D.T. Pierce, J. Unguris, and R.J. Celotta (National Bureau of Standards)
- Magnetism in the High T_c Superconductors by S.K. Sinha (Exxon Research and Engineering Company)
- MBE of Magnetic Metallic Structures by G.A. Prinz (Naval Research Laboratory)
- Diluted Magnetic Semiconductors by N. Samarth and J.K. Furdyna (University of Notre Dame)
- Rapidly Solidified Neodymium-Iron-Boron Magnets by J.J. Croat and J.F. Herbst (General Motors)

Voice Choice

How is an article for scientific publication written? In such writing, a style of prose comprising constructions around intransitive verbs and verbs of passive voice is typically chosen. An impression of detached objectivity is thus conveyed. Whereas an impression of pseudo-intellectual affectation may be given to the lay reader, both credibility and humility are added for the technically aware. Active voice, if used at all, is confined to third-person, inanimate subjects. Also, superlatives are often understated by authors (except in some publications where the obligatory word "first" must adorn the abstract and first paragraph). Without the measured, low-key, matter-of-fact style, an impression of emotional subjectivity and pomposity would surely result.

How do we learn this? We imitate this style in the literature. Our professors and senior co-authors teach it to us informally. Courses and texts on scientific writing even give us a rationale to choose the detached voice. They explain that the choice "depends on whether one wishes to feature the agent or the action, the operator or what is operated on. The passive voice is often preferred [when] the operator is a physical but lifeless agency. Technical writers are often confirmed users of the passive voice because they wish to emphasize the what and the how rather than the who. Unfortunately, however, this can be done so as to show ... 'vacated responsibility.'"¹ Is it not intriguing how the same data described passively sports greater credibility than if done actively?

"The superconducting transition temperature was found by resistance measurement to be 98 K. The nature of the transition was confirmed by observing the Meissner effect." Why not: "With great anticipation, we measured the resistance as a function of decreasing temperature and discovered to our immense surprise and glee that the sample began superconducting below the unbelievably high temperature of 98 K. After we anxiously checked that the leads were still attached to the sample and that the voltmeter was indeed still working, we first celebrated exuberantly and then, fearing that resistance alone would not convince the skeptics of the world, we looked for and found a healthy Meissner effect to confirm our discovery. Hooooray!" The more expressive choice of voice and accompanying emotional modifiers may be a less efficient use of language for communicating the essential data, but has far greater potential for involving the reader in the discovery.

The scientific method dictates that all relevant parameters and assumptions be stated clearly and fully so that other independent experts can repeat and corroborate the results. This is a stringent and uncompromising tradition to which we must all adhere. But must we also be dry, abstract, humorless, and boring in the way these essentials are delivered? Perhaps yes and perhaps no. Peppering text with irrelevant hyperbole certainly does make it more difficult to find and extract only the salient aspects (not to mention making it harder to satisfy length restrictions of letter journals). But, adding a human flavor (in spite of the well-known rampant subjectivity to which humans are subject) may make our science more palatable and inviting to a wider readership.

The same texts that explain that passive voice is sometimes indispensable say: "Where directness is desired, use the active voice. Avoid passive constructions."² "[The science writer] will write positively, confidently. Unless he does, neither the editor nor the reader will be convinced that he has a story worth telling. He will write in the active voice, avoiding the slow and passive verbs."³ It isn't likely that the choice of passive voice really fools anyone anyway—if we imperfect humans are not the implied subjects then who did the work and who wrote the paper!

For the sake of efficiency and technical clarity, sticking to the traditional style for archival publication may indeed be best. However, let us not mistake the absence of evocative prose for the presence of credibility. And let's inject the human and exciting reasons we do science in the first place into our writings for more general consumption.

E.N. KAUFMANN

1. *Essentials for the Scientific and Technical Writer* by Hardy Hoover (Dover Publications Inc., New York, 1980) p. 121.
2. *Handbook for Authors of Papers in American Chemical Society Publications* (American Chemical Society, Washington DC, 1978) p. 23.
3. *Writing Science News for the Mass Media* by David W. Burkett (Gulf Publishing Co., Houston, 1973) p. 181.