

WHAT HAVE NEUTRONS EVER DONE FOR US?

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*Upstairs in a secret and secure location,
mineralogical activists have gathered...*



RICH: Alright everyone, settle down. I hereby call this extraordinary meeting of the Society for the Protection of Analytical Methods [SPAM] to order. Brothers and sisters, we face a grave threat. For decades, we've provided X-rays and electrons to study the structure and properties of natural materials – everything a mineralogist could ever dream of. But now this!

[Frantically waves the "Exploring Earth and Planetary Materials with Neutrons" issue of Elements.]

They are threatening to take it all away from us! They've bled us dry! They've taken everything we had, and not just from us, but from our fathers, and from our fathers' fathers.

NANCY: And from our fathers' fathers' fathers.

RICH: Yeah.

NANCY: And from our fathers' fathers' fathers' fathers.

RICH: Yeah, all right Nancy. Don't labour the point. But what have neutrons ever done for us?

DAVID: Hydrogen?

RICH: What?

DAVID: Well, they do scatter pretty well off the lighter elements...

RICH: Oh. Yeah, yeah. They do do that I suppose, yeah.

JODI: And magnetism.

NANCY: Oh, yeah, the magnetism Rich! Remember what it used to be like trying to determine magnetic structures?

RICH: Yeah. All right. I'll grant you hydrogen and magnetism are two things that neutrons can do pretty well.

JODI: And the vibrational spectroscopy.

RICH: Well, yeah, obviously, the vibrational spectroscopy. I mean, that goes without saying, doesn't it? But apart from the hydrogen, the magnetism, and vibrational spectro...

DAVID: Isotopic substitution!

NANCY: Neutron activation analysis!

JODI: Total scattering!

RICH: Yeah, yeah. All right. Fair enough.

DAVID: All those disordered structures...

NANCY and JODI: Oh, yes!

DAVID: Yeah. Yeah, that's something we'd really struggle with without neutrons.

NANCY: Small angle scattering, tomography of nanoporous structures!

JODI: And we can make complex sample environments, Rich.

DAVID: Yeah, given how weakly neutrons interact with matter, let's face it, they're the only ones who could get through some of the high-pressure rigs we have in a place like this.

ALL: Heh heh heh.

RICH: All right, all right. But apart from hydrogen, magnetism, lattice dynamics, isotopic substitution, chemical imaging, disordered structures, 3-D imaging, and the ability to build complex sample environments, I ask you: what have neutrons ever done for us?

NANCY AND DAVID: Well, I guess we'd better read the issue and find out...

Richard Harrison
Principal Editor

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