Erratum: Structural characterization of C60 and C70 fullerenes by smallangle neutron scattering [J. Chem. Phys. 99, 9224 (1993)]

K. A. Affholter, S. J. Henderson, G. D. Wignall, G. J. Bunick, R. E. Haufler, and R. N. Compton

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LETTERS TO THE EDITOR

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ERRATA

Erratum: Structural characterization of C_{60} and C_{70} fullerenes by small-angle neutron scattering [J. Chem. Phys. 99, 9224 (1993)]

K. A. Affholter
Chemical Technology Division, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee 37831

S. J. Henderson
Biology Division, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee 37831

G. D. Wignall
Solid State Division, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee 37831

G. J. Bunick
Biology Division, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee 37831

R. E. Haufler and R. N. Compton
Health and Science Research Division, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee 37831

The first paragraph of Sec. V ‘‘Discussion,’’ ‘‘Table II,’’ and the Abstract in this paper contain errors so are reproduced below in their correct form. We thank Herbert Smoren for bringing these errors in the original manuscript to our attention.

In the Abstract, change ‘‘similar’’ on line 10 to ‘‘8% higher.’’

In Sec. V ‘‘Discussion,’’ replace the first paragraph with this paragraph as well as Table II:

The weighted rms distance of all scattering elements from the center of gravity (R_g) can be calculated for simple geometrical bodies such as hollow spheres and ellipsoids with known inner and outer radii. We used the atomic dimensions given in Refs. 18 and 19 in conjunction with a Monte Carlo (MC) shape modeling program,[20] which calculates $I(Q)$ profiles for any geometrical shape. The C_{60} is modeled as spherical shells and the C_{70} is modeled as a combination of hemispherical shells and cylindrical shells. This led to model values of 3.48 and 3.75 Å for C_{60} and C_{70}, respectively, at $q=0$. These model values increase when calculated for the actual q-range used in the experimental measurements to 3.55 and 3.82 Å, respectively. Thus, the observed dimensions are close, yet systematically higher (+8%) to those estimated from the known structure of fullerenes (see Table II). This lends support to the idea that SANS can characterize the dimensions of such particles, along with any changes introduced by atomic substitution, polymerization, addition reactions, etc.

TABLE II. A comparison of measured and calculated dimensions and cross sections for C_{60} and C_{70} fullerenes.

	C_{60} 7.75 mg/ml	C_{60} 5.45 mg/ml	C_{70} 7.59 mg/ml	C_{70} 4.78 mg/ml
R_g (Å) (experiment)	3.80	3.85	4.14	4.10
R_g (Å) (model)	3.55	3.55	3.82	3.82
$10^3\ d\Sigma/d\Omega$ (cm^{-1}) (expt)	7.20	4.61	8.11	4.18
$10^3\ d\Sigma/d\Omega$ (cm^{-1}) (mod)	7.21	5.07	8.26	5.20

In the References, change Ref. 20 to:

[20] S. J. Henderson, Biophys. J. (to be published).