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June 13, 2005

Dr. Kerry Rowe, Vice-Principal (Research)
Richardson Hall,
Queen's University

Dear Dr. Rowe,

**Re: Further Allegations of Misconduct in Academic Research-
Research Funded by the Canadian Space Agency**

I am writing this letter in accordance with Article 17 of the Collective Agreement. I am referring to the following paper by X. Zhu and R.W. Smith:

" Diffusion in Liquid Pb-Au Binary System" , X. Zhu and R.W Smith, Materials Science Forum, Vol.215-216, pp. 113-118 (1996)

A copy of this paper and other relevant documents are enclosed.

It has come to light now that the above paper by Zhu and Smith is the exact copy of another paper that was published previously in 1995. See "Experiments With Liquid Diffusion in Reduced Gravity", X. Zhu, M. Kaya and R.W. Smith, pp. 1-4, 7th international symposium on experimental methods for micro-gravity materials science, Edited by Robert A. Schiffman (The Minerals, Metals & Materials Society) (attached).
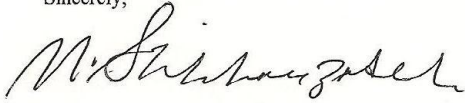
It can be seen that all paragraphs, figures, tables and even the references are lifted from the earlier publication. The authors have made changes in the title of the paper and altered the symbols in the figures in an attempt to deliberately mislead. The authors apparently like to give the impression that this is yet another original paper that could not be materialized without the financial assistance of the Canadian Space Agency, NSERC, and Queen's University. It is difficult at this point to know why the name of the second author (M. Kaya), has been removed.

Additional Note: Using the data points in Fig. 2(a), one can easily calculate the area under the curves and determine the amount of gold that has been diffused into the specimen during the diffusion experiments. With the data given in Fig. 2(a), simple calculations show that the amount of gold diffused into the specimen is approximately 2.5 times the original mass of gold used at the start of the experiments! The error associated with each point in Fig. 2(a) appears to be on average about 150% - far greater than 0.5% claimed in the paper. The data presented in Fig .2(a) are so improbable that it seems impossible that they represent real data, free of some selection process or some other misrepresentation.

The values of the diffusion coefficient (D) reported in the above paper (and in the more recent papers by the same authors) are determined from the concentration vs. distance graphs similar to the graphs in Fig. 2(a). It is difficult to understand how the values of D at 0-g and 1-g could be reliably determined and compared when the error in concentration measurements is 150%. It is difficult to understand how the

authors could detect the small influence of parameters such as "g-jitter" on D values in their more recent work when the error in concentration measurements could be as high as 150%.

Sincerely,

M.Shirkhanzadeh
Associate Professor
Department of Mechanical Engineering

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