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DEPARTMENT OF PLANT SCIENCES
SCHOOL OF BIOLOGICAL SCIENCES

Head of Department and Professor of Biology: E. A. Bell
Professor of Botany: J. W. Bradbeer

26th May, 1978.

Dr. S Ranganayaki,
68 Dilkusha,
New Katra,
Allahabad 211002
U.P. India.

Dear Dr. Ranganayaki,

At last we were able to look into the physical and chemical properties of the photochemically synthesised particles you mailed to us. I am enclosing the low temperature electron paramagnetic spectra of the particles. The e.p.r spectra do show characteristics of transitional metals though lines due to Mo are more prominent than those due to Fe. It is interesting to note that the particles undergo reduction with sodium dithionite. Would it be possible to make the particles with less molybdenum?

More interesting data was obtained in the studies on the catalytic activities of these particles. All the four compounds you sent are able to liberate hydrogen in the presence of sodium dithionite (or illuminated chloroplasts) and the enzyme hydrogenase - this is a property characteristic of many bacterial and all plant ferredoxins. We are quite thrilled by this observation and would like to continue some quantitative studies on these particles - Compound I you mailed on 25.8.77 seems to be the most active of the lot.

How reproducible are the method of preparation of these particles? Have you managed to separate unreacted salts and other reactants from the mixture? We would like to have any further information you have on these particles and if possible more of them. We will keep you posted with the results.

With greetings from Prof. Hall and me to you and Prof. Krishna Bahadur,

Yours sincerely,

K. K. Rao

K. Krishna Rao.

P.S. Would you kindly mail reprints of all publications on these particles except Zbl. Bakt. Abt 130, S211-218 (1975)? Thanks.

KKR