**Structures of Porous Compacts of Coated Glass Microspheres**

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**ABSTRACT:** The coating and compaction of glass microspheres (of diameters 90 to 200 μ) to form rigid yet porous compacts may yield enhanced properties of the coating compound. SEM micrographs confirm the presence of interconnected pores of sizes from 10 to 100 μ. Compounds such as nickel, silver and zinc oxide were coated onto the microspheres before being compacted. The structures of the coatings and the microspheres were examined by neutron diffraction, X-ray diffraction, UV-Visible and FTIR spectroscopy.

Changes in structural parameters of the coated materials were seen with X-rays. FTIR data also show changes in features from pure compound to the coating.

Neutron scattering data with the High Q diffractometer at Dhruva reactor (B.A.R.C., Mumbai) upto a Qmax of 15 Å-1 have been obtained. The structure of the uncoated compact was seen to be similar to a silica glass in its short-range structure but more compacted in its intermediate order. The nickel-coated compact showed reflections with lower d-spacings indicating the nickel compound to be no longer the pure metal. The structural changes observed in ZnO indicate that this compound develops an amorphous phase. Further investigations are required into the structures of these complex systems.