The New Nation

Nobel Prize for Physics, Chemistry

STOCKHOLM, Oct 19 (Reuter): West Germans Johann Deisenhofer, Robert Huber and Hartmut Michel won the 1988 Nobel Chemistry Prize, the Royal Swedish Academy of Sciences announced today.

Another report says : Americans Leon Lederman, Melvin Schwartz and Jack Steinberger shared the 1988 Nobel Physics Prize, the Royal Swedish Academy of Sciences announced today.

They won the 400,000-dollar prize for the neutrino beam method and the demonstration of the double structure of the leptons through the discovery of the Muon Neutsino', the academy said.

The academy said their work led to discoveries that opened entirely new opportunities for research into the innermost structure and dynamics of matter.

"Two great obstacles to further progress in research into weak forces—one of nature's four basic forces—were removed by the prize-winning work", the citation said

The work was planned in the 1960s at New York's Columbia University and carried out at the Brookhaven National

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Accelerator Laboratory on Long Island.

Lederman, 66. is at present director of the Fermi National Laboratory in Batavia, near Chicago.

Schwartz, 55, a former professor at Columbia and Stanford Universities, now runs his own computer communications company in mountain view,California.

Steinberger, 67, works at the laboratories of the European Nuclear Research Centre (CERN) near Geneva.

The academy explained that neutrinos are almost ghostlike constituents of matter that can pass unaffected through any obstacle, They are produced during the conversion of atomic nuclei at the centre of the sun.

"The contribution now rewarded consisted among other things of transforming the ghostly neutrino into an active tool of research," the citation said.

The prize winners produced neutrinos using a particle accelerator. They discovered that there were in fact two different kinds of neutrinos.

One belonged with the electron and the other with the muon, a relatively heavy charged particle discovered in cosmic radiation in the 1930s.

The citation said neutrinos were inoffensive, holding no electrical charge and travelling at or near the speed of light. It was still not known whether or not they were weightless.

The discovery of a method of studying the effect of weak forces at which energies later become important in the study of quarks—pointlike particles within protons or neutrons.

'Neutrino beams can reveal the hard inner parts of a proton in a way not dissimilar to that in which X-rays reveal a person's skeleton', the citation said.

The prize winners built their own measuring device to track the flight of the neutrinos they produced, partly using steel from scrapped warships.

The result of the experiment established that the electron formed its own delimited family with its neutrino.