1047-11-9 Susil Kumar Jena* (susil_kumar@yahoo.co.uk), Professor, Dept. of Electronics and Telecom. Engineering, KIIT University, Bhubaneswar, Orissa 751024, India. Method of Infinite Ascent applied on $2^{p} . A^{6}+B^{3}=C^{2}$.
In the VII-th Joint Meeting of the American Mathematical Society and the Sociedad Matematica Mexicana held in Zacatecas, Mexico, during May 23-26, 2007, in a talk titled: Method of Infinite Ascent applied on $A^{6}+n \cdot B^{3}=C^{2}$, I introduced a method of regenerating infinite number of co-prime integral solutions for $(A, B, C)$ for a class of integers $n$. This time, I wish to apply the Method of Infinite Ascent to the title equation to prove that for any positive integer $p$, when $p=6 k-5$ or $p=6 k-3$ with $k$ being a positive integer, the equation, $2^{p} . A^{6}+B^{3}=C^{2}$ has infinitely many co-prime integral solutions for $(A, B, C)$.The method, being constructive, will help us to generate any number of co-prime integral solutions of the same. I will provide my latest findings on this interesting Diophantine equation for the other uncovered values of $p$ only at the meeting. (Received October 23, 2008)

