1077-51-1483   **Deborah Oliveros*** (`dolivero@matem.unam.mx`), Instituto de Matematicas, UNAM, Área de la Investigación Científica, Circuito Exterior C.U., 04510 Mexico, DF, Mexico, and **Gabriela Araujo** (`garaujo@matem.unam.mx`), **Hubard Isabel** (`hubard@matem.unam.mx`) and **Egon Schulte**. *Resent developments about Colorful Polytopes.* Preliminary report.

Given a r-graph G with edge chromatic number r, there exist a natural construction of an abstract r-Polytope called the Colorful Polytope, such that, the 1-skeleton of such polytope is the graph G. In particular when the graph is a Cayley graph of the symmetric group the polytope is a generalization of the Permuthahedron called the Graphicahedron. In this talk we will discuss resent developments of the study of this polytope, explore some combinatorial symmetry properties of it, analyze transitivity properties of their automorphism group and discuss some interesting cases. Furthermore we will observe an interesting relation of this polytopes with PL-manifolds. (Received September 19, 2011)