

**SP - (16003) - FOSTERING SYMBOLIC-MATHEMATICAL MODEL COMPREHENSION IN PHYSICAL CHEMISTRY**

Ines Komor (Germany)<sup>1</sup>; Helena Van Vorst (Germany)<sup>1</sup>; Elke Sumfleth (Germany)<sup>1</sup>; Julian Roelle (Germany)<sup>2</sup>; Eckart Hasselbrink (Germany)<sup>1</sup>

1 - University of Duisburg-Essen; 2 - Ruhr University Bochum

**Short Abstract**

*Developing and using models is of high importance in learning and teaching science. Concerning chemistry teaching at the university level, especially in Physical Chemistry symbolic-mathematical models play a major role. Results of a preliminary study show that undergraduates have difficulties in developing an adequate chemical model, mathematizing the chemical model and working mathematically. According to that, this PhD project focuses on the development and evaluation of an example-based training program fostering symbolic-mathematical model comprehension in Physical Chemistry, considering these difficulties. The effects of the training have been evaluated in a switching-replications-design. A Rasch analysis shows positive effects of the applied training, where students' symbolic-mathematical model comprehension improved significantly.*