

## ABSTRACT

### **Fatayatul Hasniyah, SIDN 4173131012 (2021). Development of Three Tier Instrument Test With Certainty of Response Index (CRI) to Detect Misconception in Learning Redox Reaction**

Research has been carried out to develop a Three Tier Instrument Test with Certainty of Response Index (CRI) with the aims to find out (1) the eligibility categories in terms of expert validation, (2) the percentage of misconceptions in each sub-concepts of redox reaction, and (3) the causes of students' misconceptions about redox reaction material. The instrument is prepared with 10 items validated contains each sub-concepts. Research results show that: (1) the test instrument has very decent criteria with the assessment of material aspects and language (100%) and construction aspect (91.66%), (2) the percentages of students' misconception of redox reaction of each sub-concepts based on change in oxidation number (54.36%), based on the oxidation number of the element in a compound or ion (65.18%), based on the oxidation number of the element in a polyatomic ions (60.56%), oxidizing and reducing agent in reaction (54.09%), and autoredox concept (69.98%) with all categories of misconceptions are high, (3) the causes of students' misconceptions in learning redox reaction found in the material aspect (48.08%), in learning source aspect (39.19%), and in teachers aspect (12.91%). It because students were taught by different teacher, different method, and different source in learning redox reaction.

**Key words:** Misconception, Three-Tier Instrument Test, Certainty of Response Index (CRI), Redox Reaction.