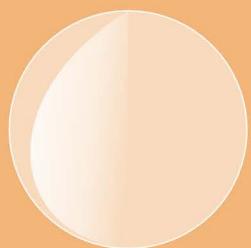


**Analysis of TPACK (Technological Pedagogical and Content Knowledge) variables for middle school teachers through survey in the Pasar Jambi district**

*Tri Windianingsih, Nova Susanti, Alrizal*



**Comparison of students' physics motivation by gender using the Physics Motivation Questionnaire (PMQ): Rasch model analysis**

*Anisa Widayastuti, Elvine Heranita, Moh. Irma Sukarelawan*

**Spreadsheet to analyze the comparative of elasticities properties of aluminum alloy materials**

*Sudirman, Vegisari, Heru Kuswanto, Eko Rudiansyah*

**Morphological structure and functional group of Toraja robusta and arabica spent coffee grounds for electronic device applications**

*Dwi Prasetyawati Thana, Ishak Pawarangan, Wilson Jefriyanto, Martina Pineng, Eko Suripto Pasinggi, Rali Sarira Bone, Yosep Mari', Conny*

**Synthesis and fabrication of superstrate and substrate Cu<sub>2</sub>ZnSnS<sub>4</sub>/CdS thin film solar cells utilizing copper powder as local materials**

*Eka Cahya Prima, Anggi Datiatur Rahmat, Andhy Setiawan*