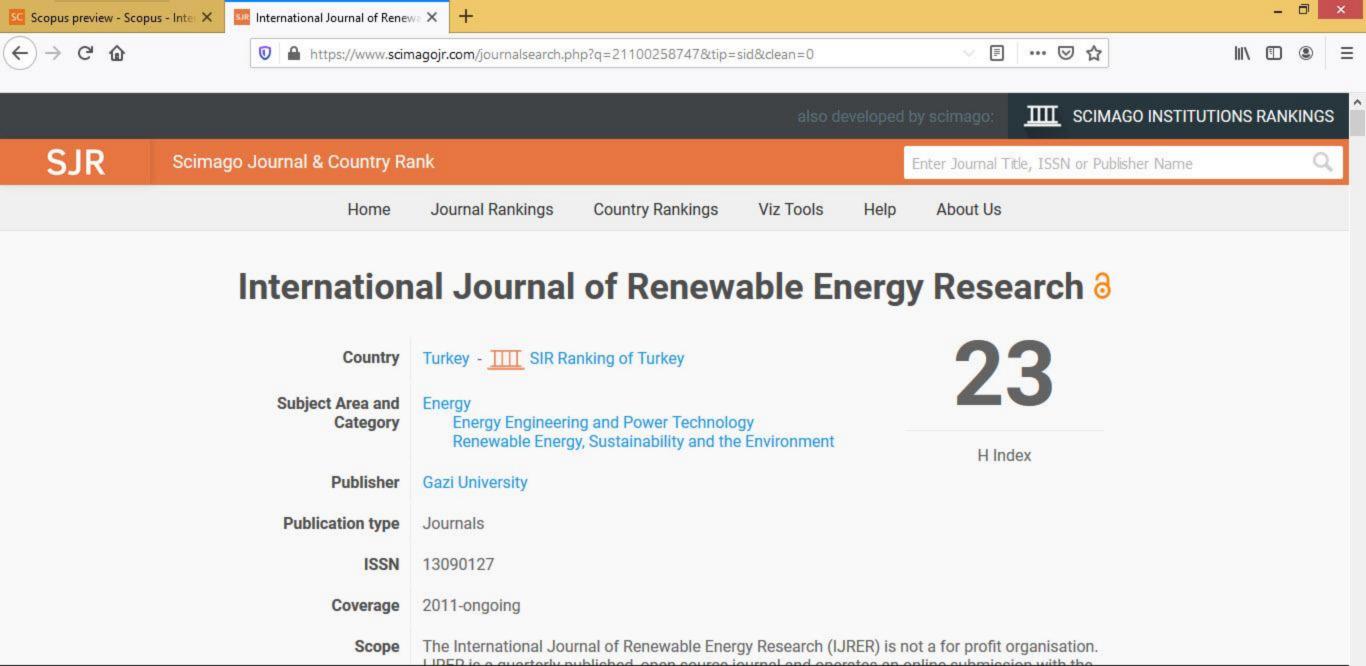
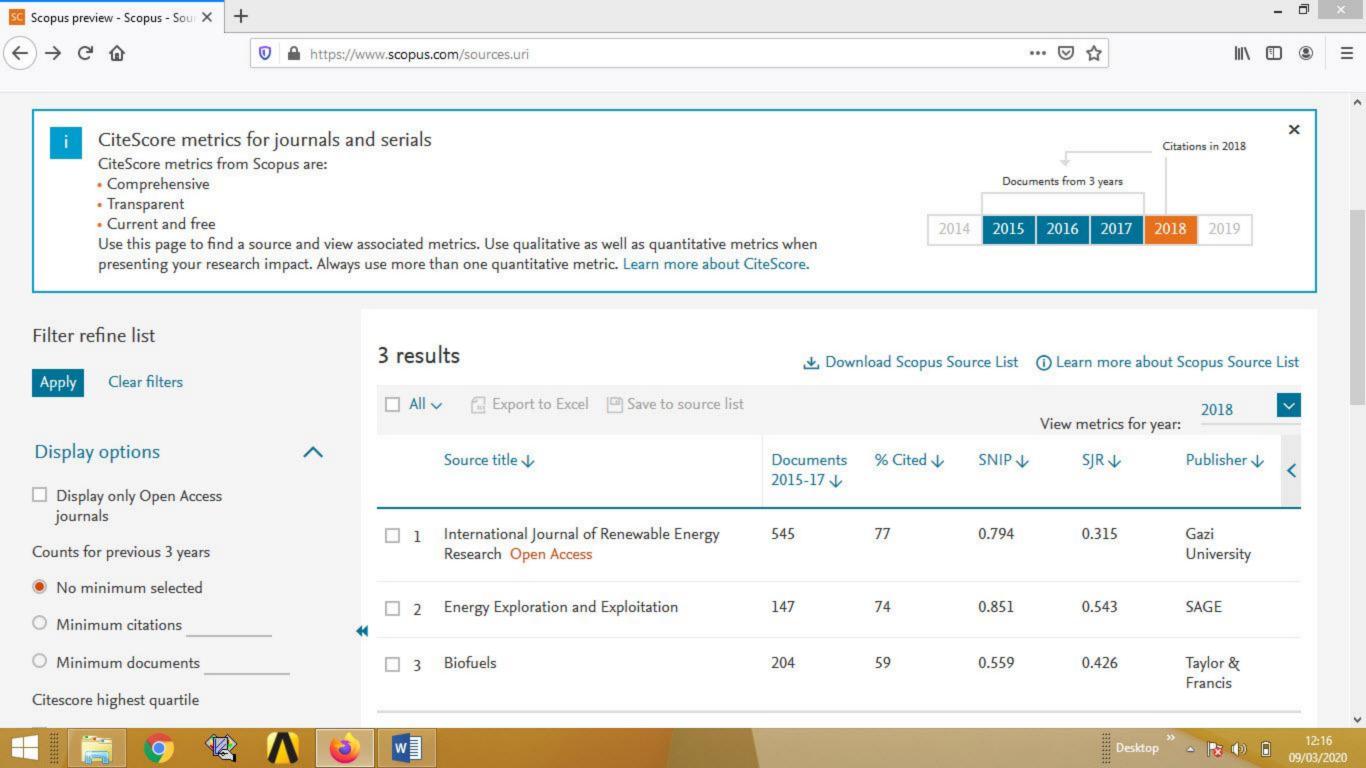
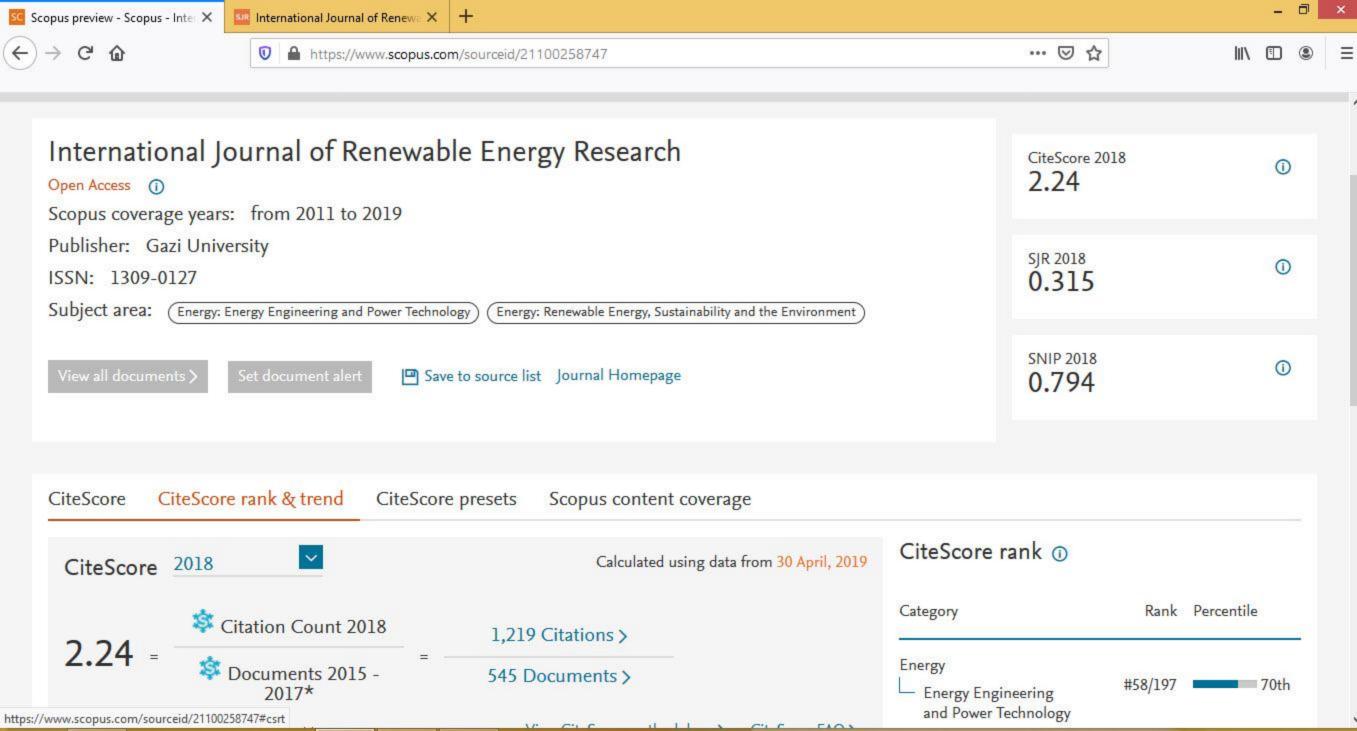
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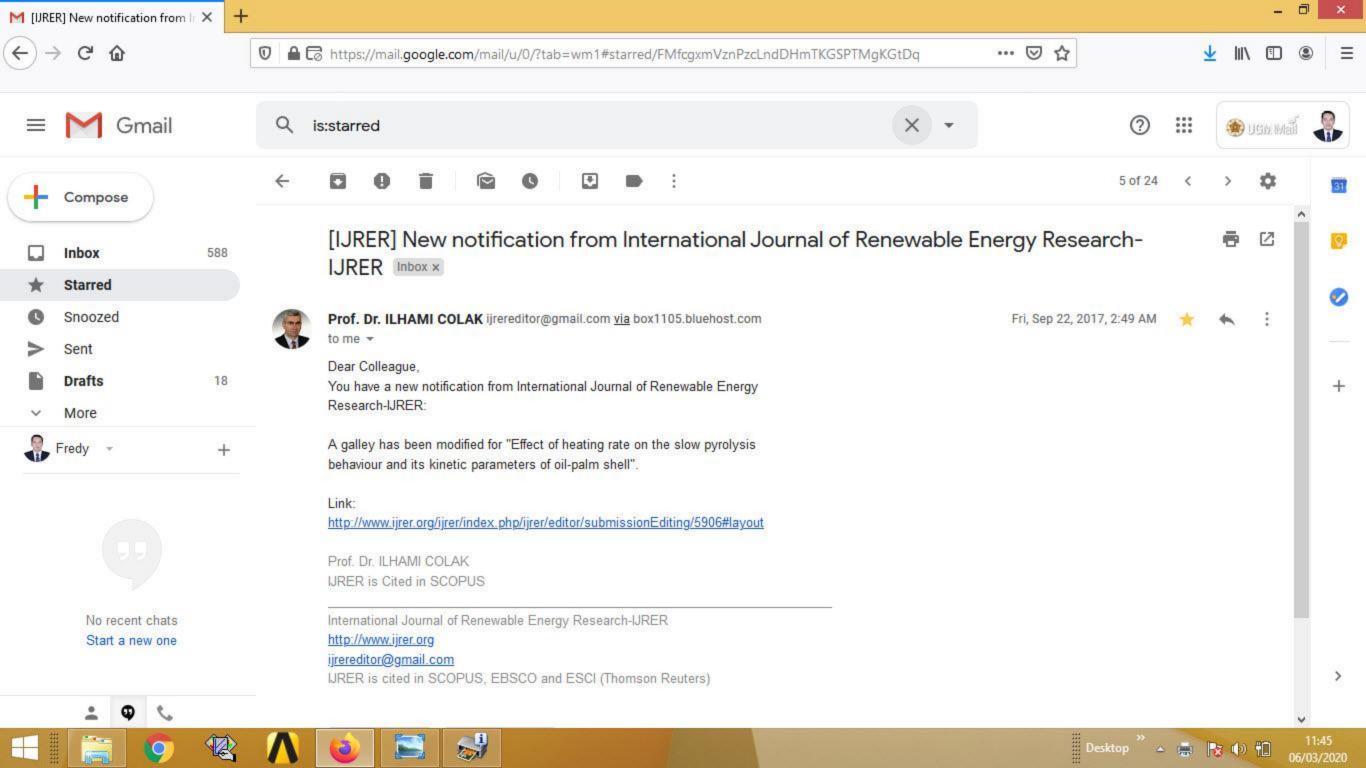
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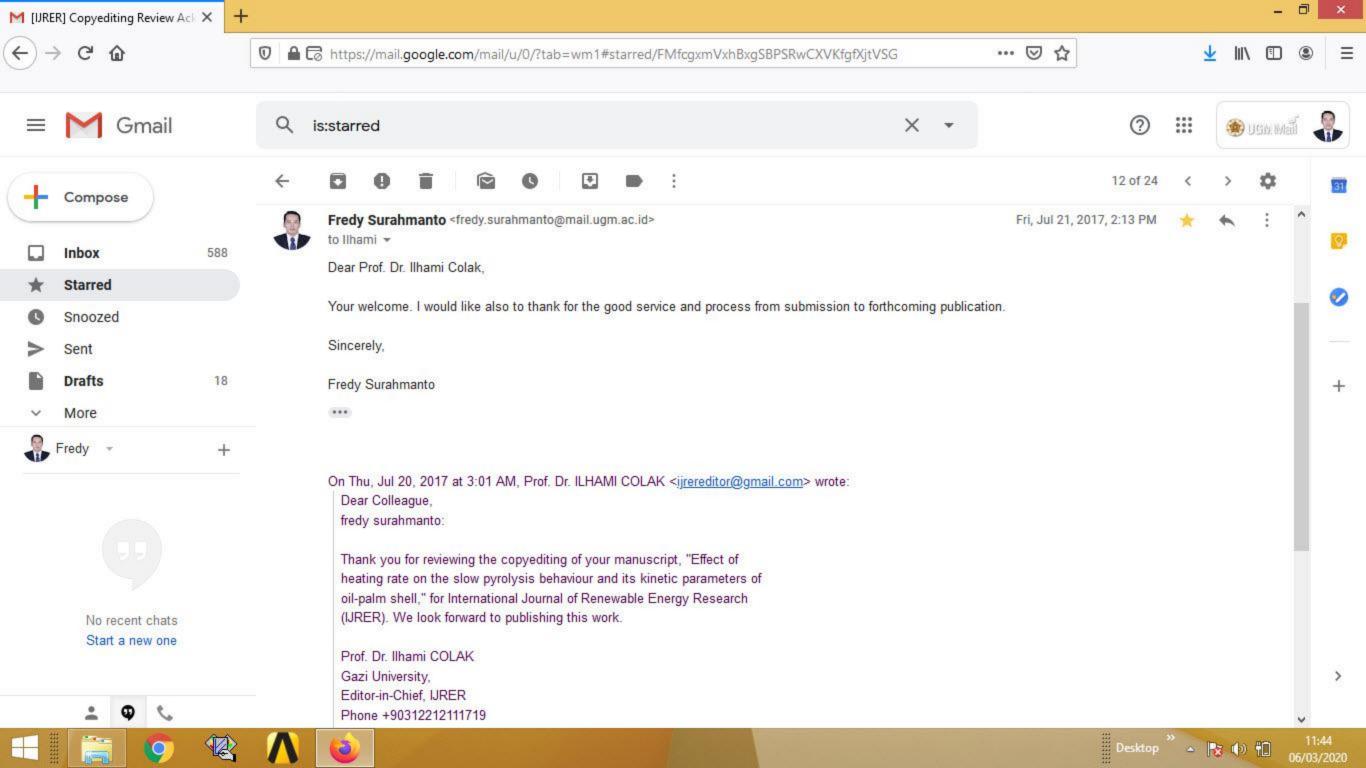


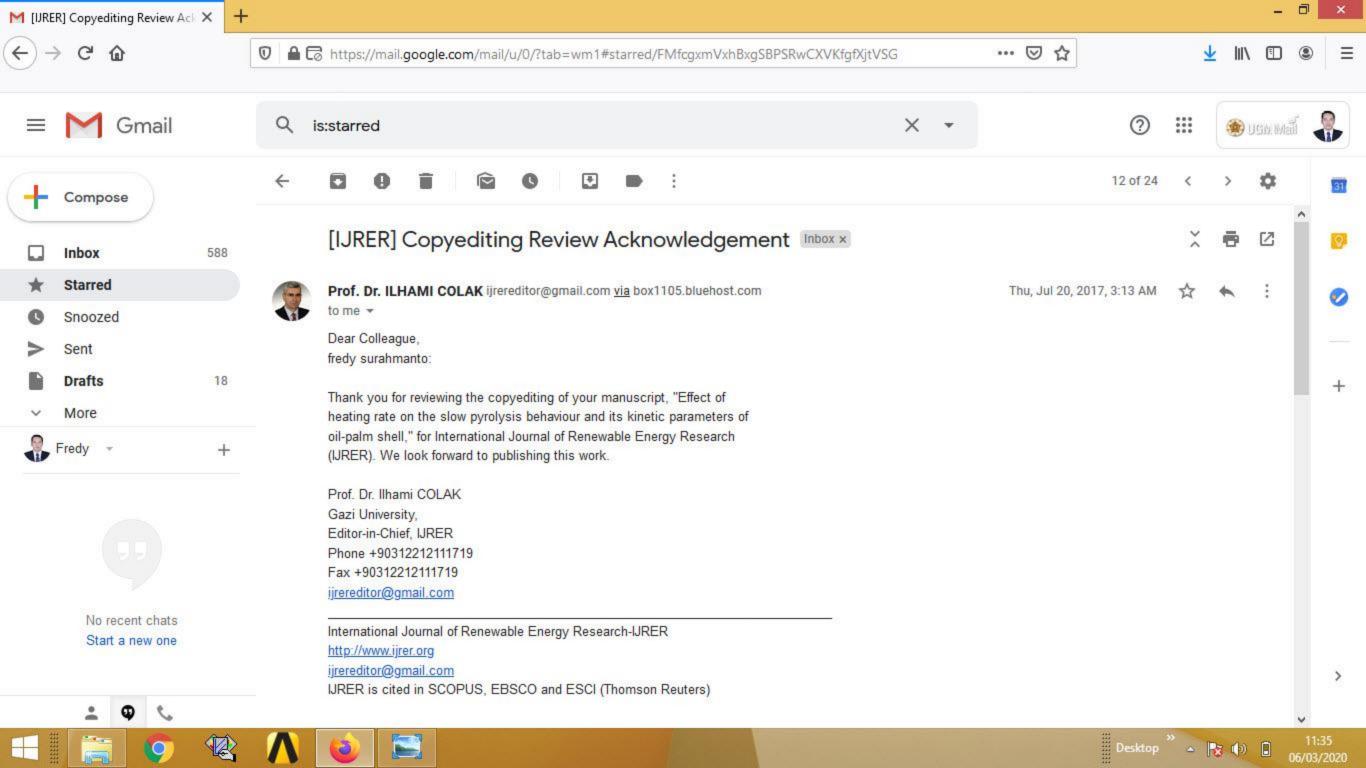


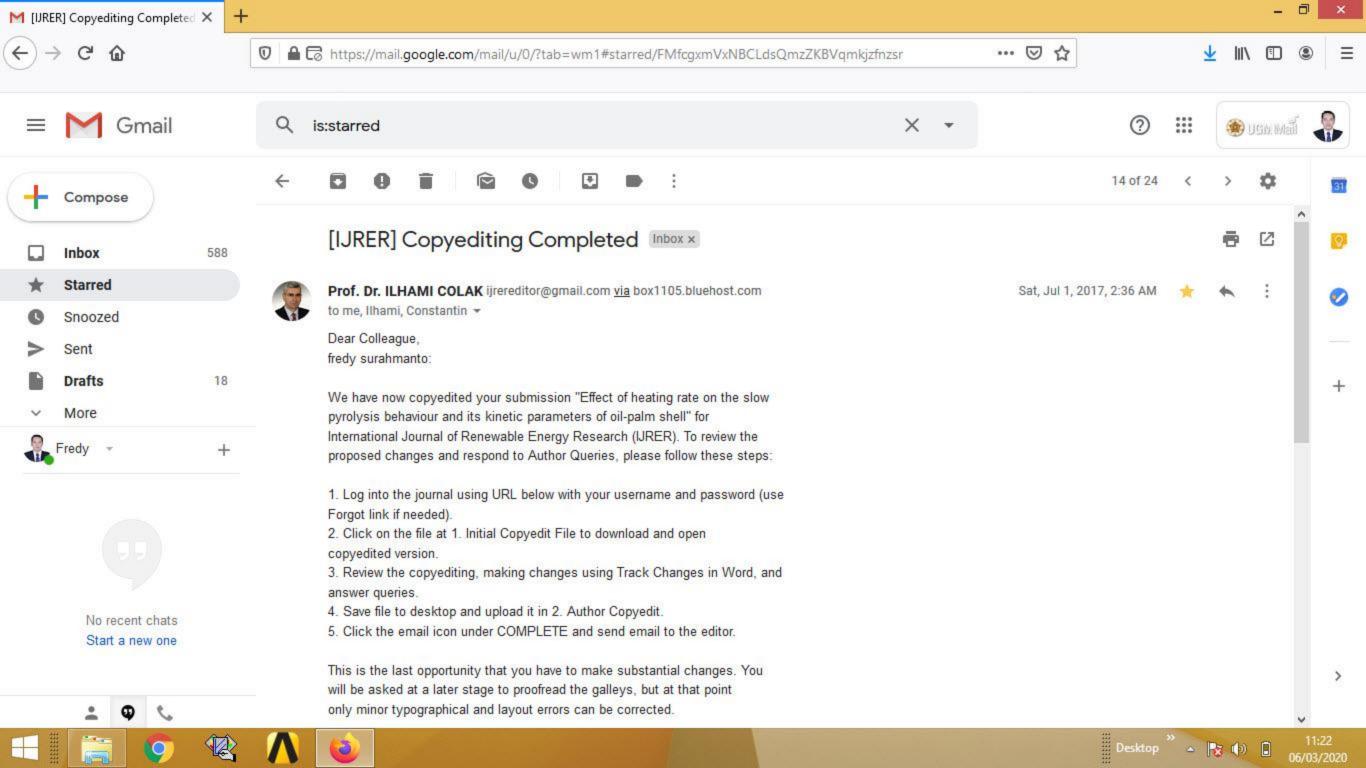


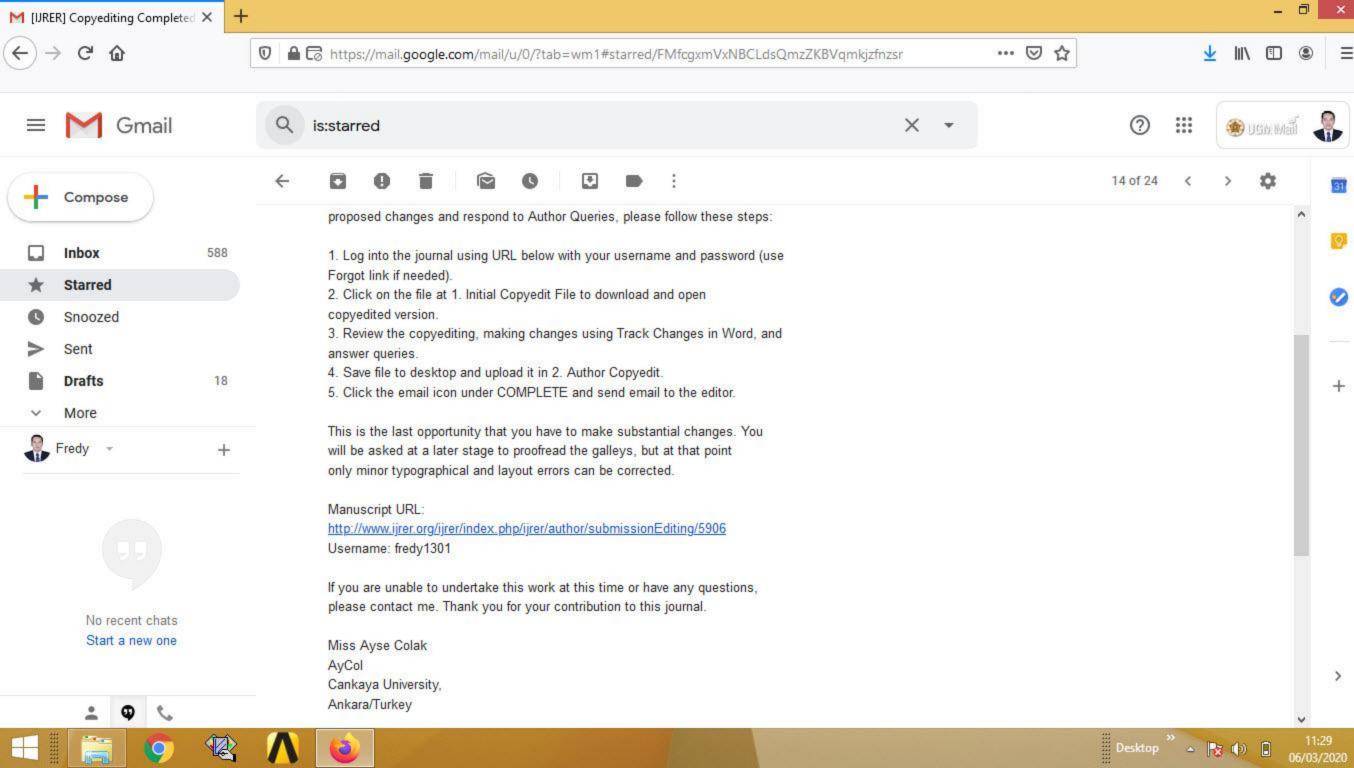


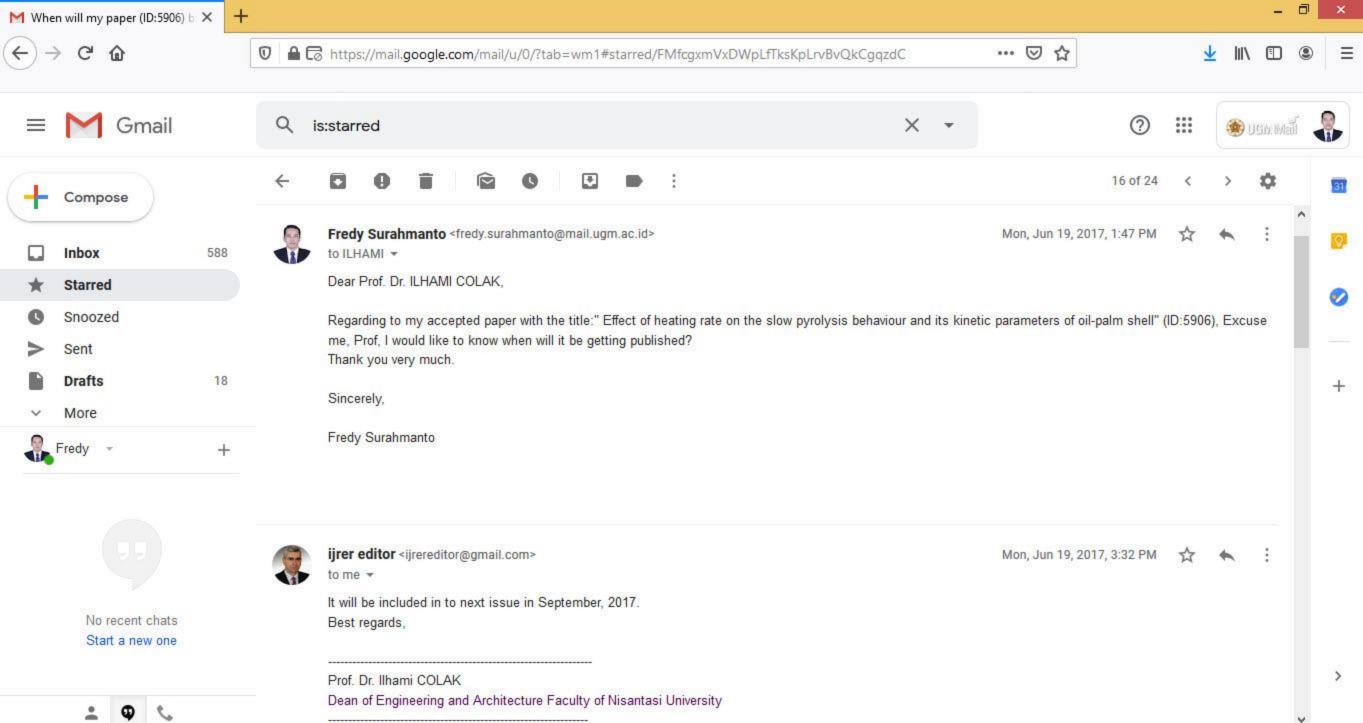


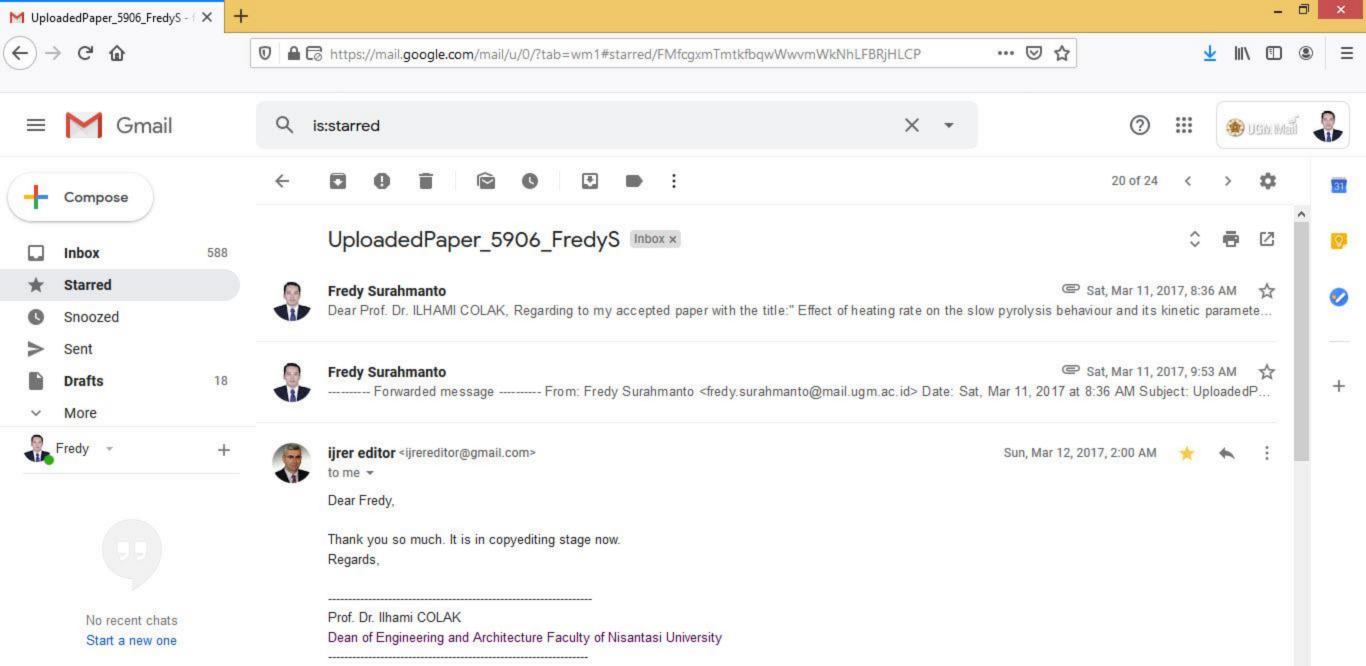


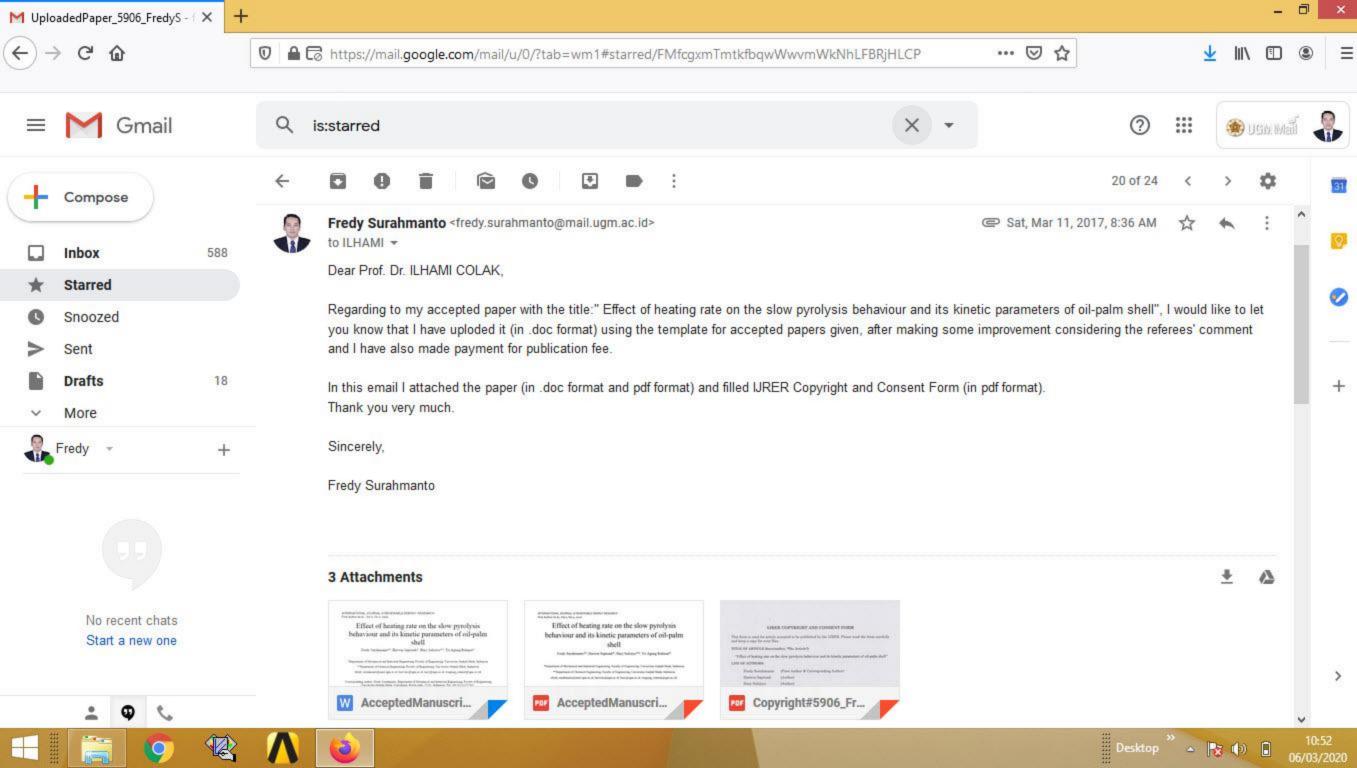


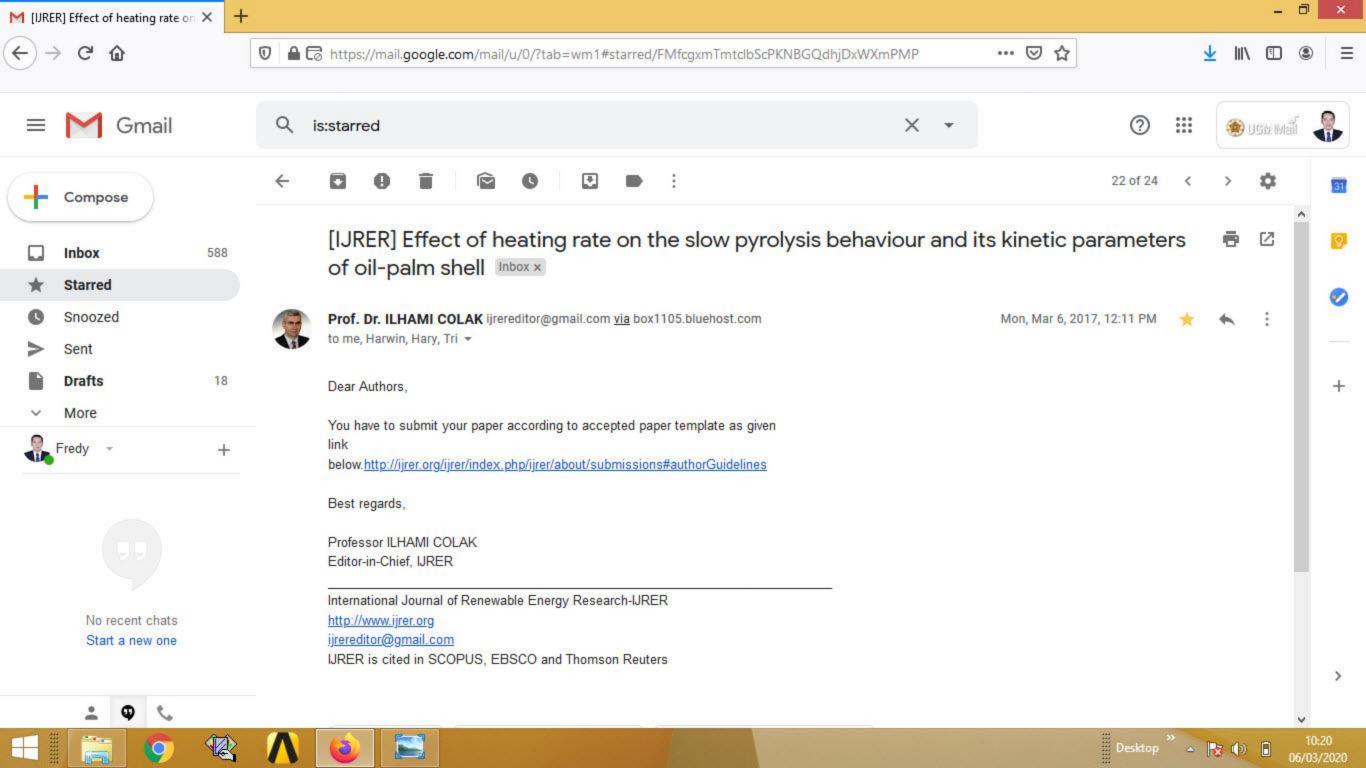


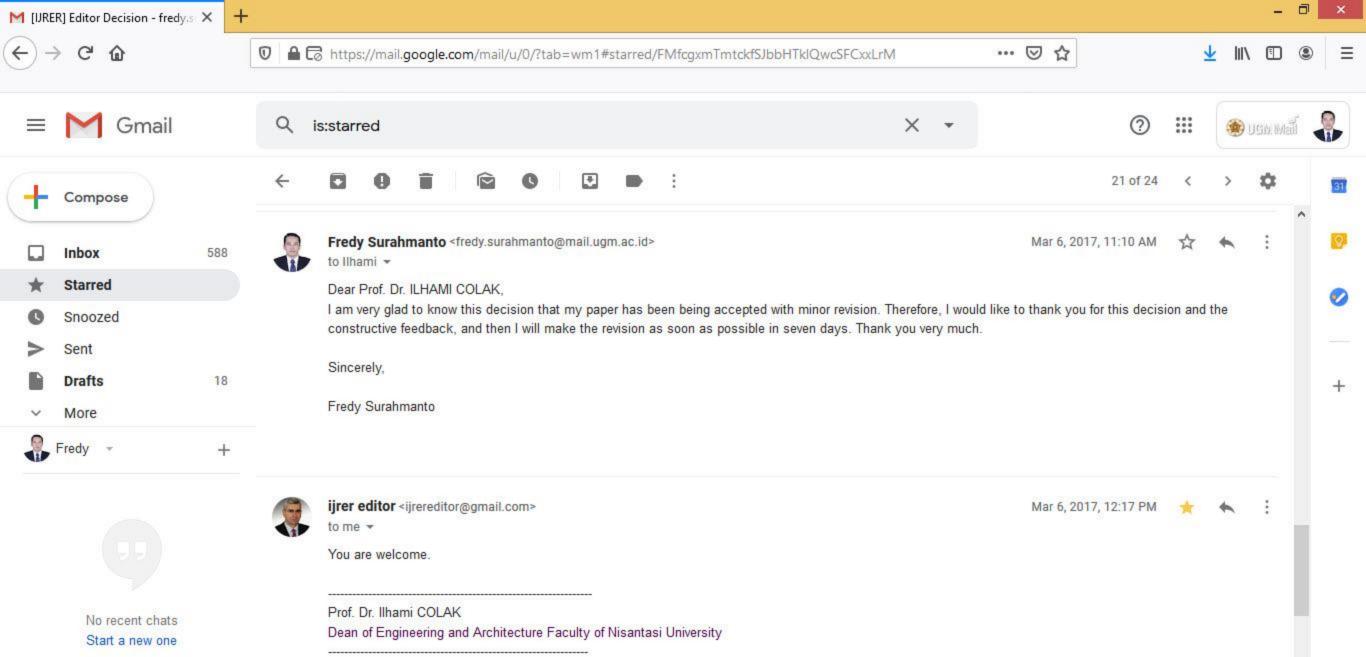


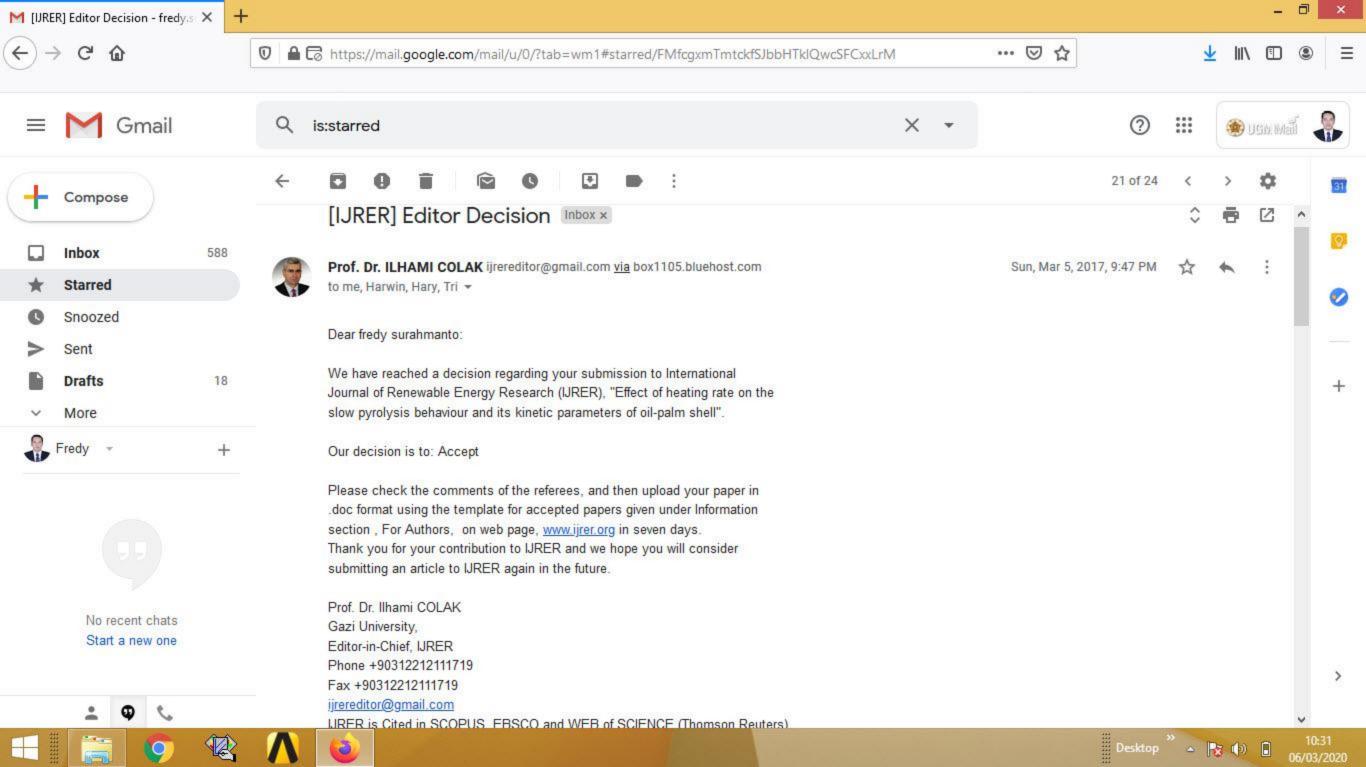


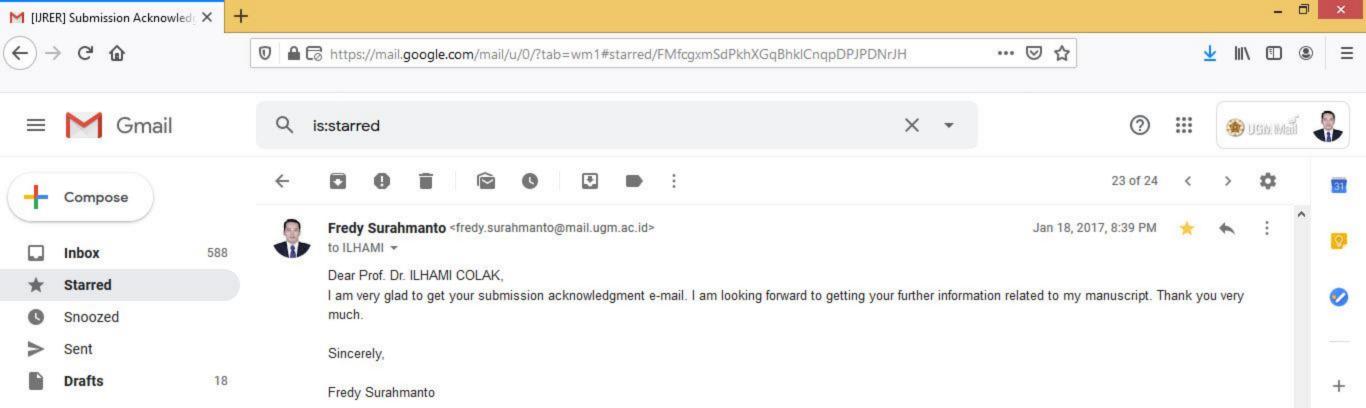


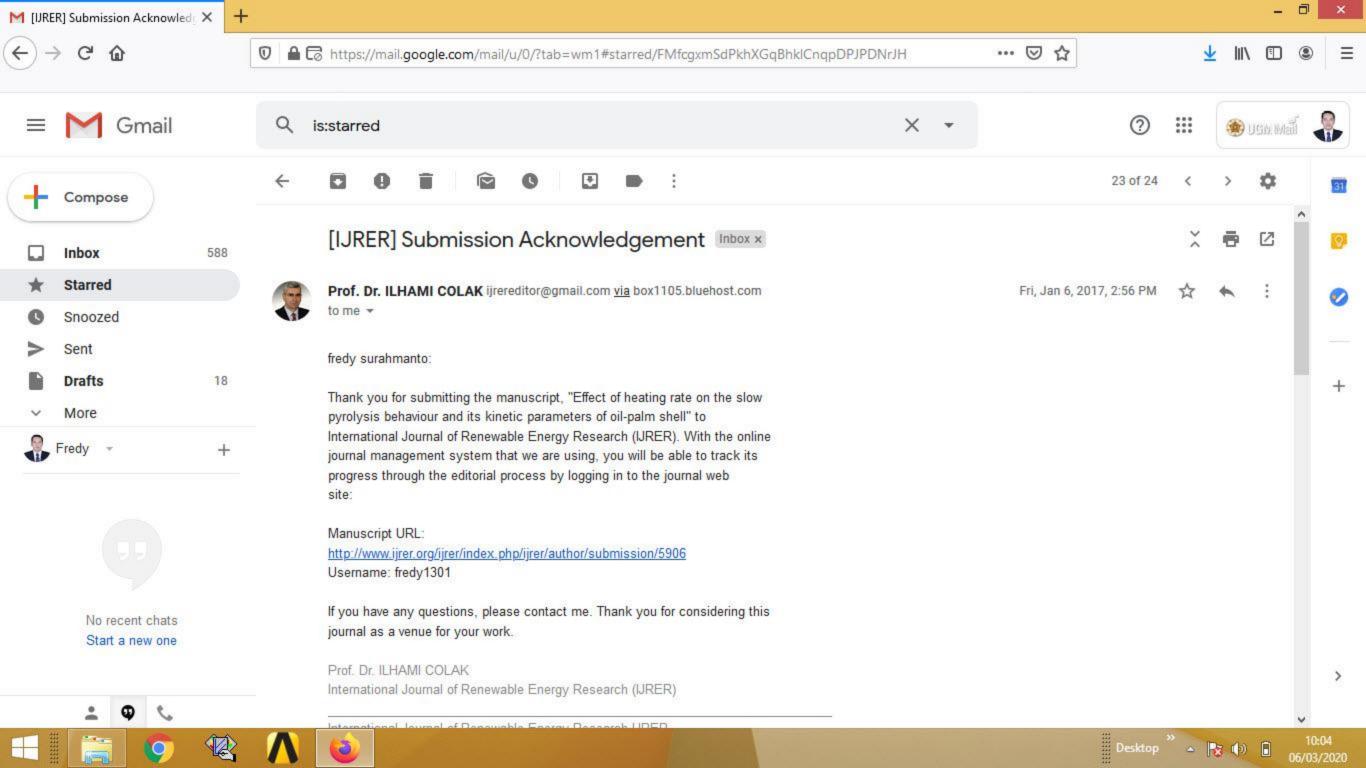


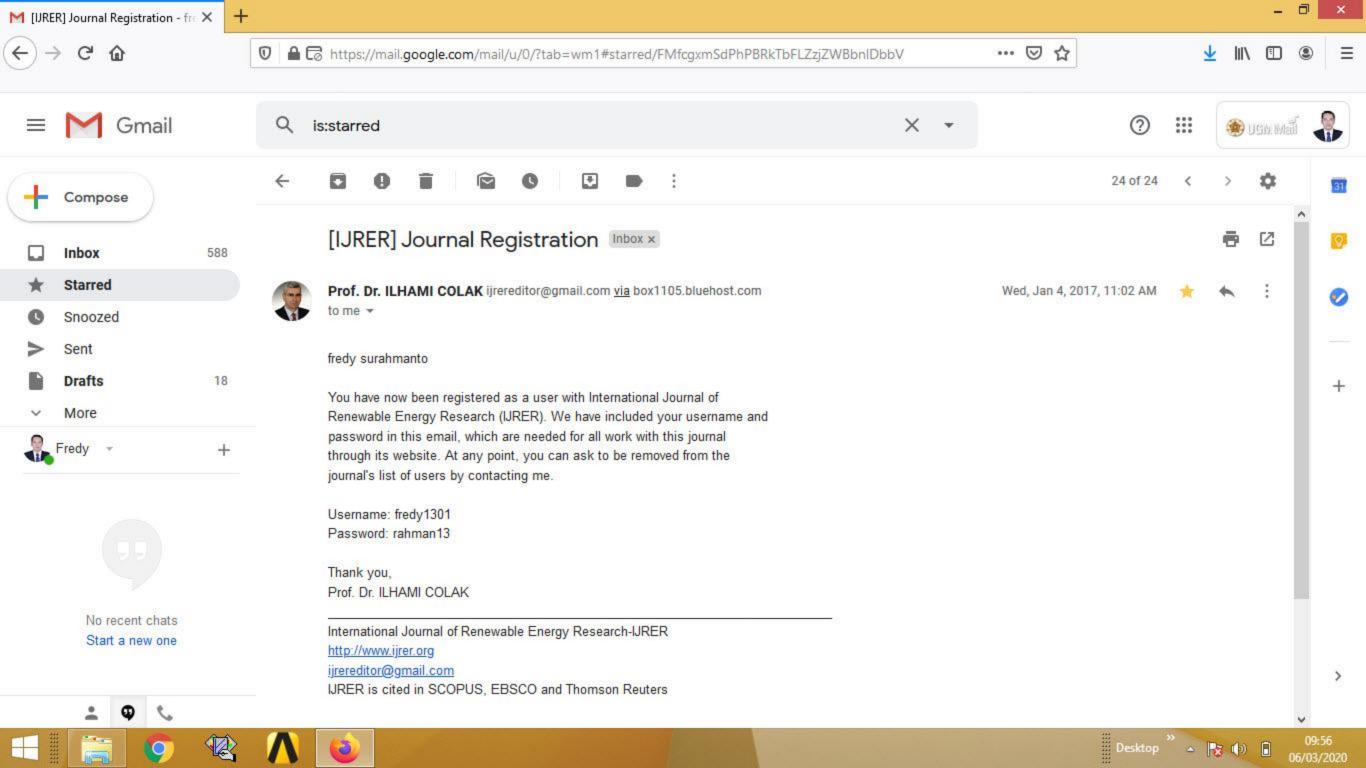












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#5906 Summary Page 2 of 4

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Title and Abstract

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Effect of heating rate on the slow pyrolysis behaviour and its

kinetic parameters of oil-palm shell

Abstract

The effect of heating rate on the slow pyrolysis behaviour and its kinetic parameters was investigated in this study. Pyrolysis experiment with oil-palm shell waste as raw material was conducted at heating rates of 5, 10, 15, and 20 °C /minute and final temperature of 550 °C by thermogravimetric analyzer. The results show that heating rate affects the thermogravimetric curve position, maximum decomposition rate, and the temperature on which the maximum mass loss rate occured. Moreover, it can be known that calculated activation energies and frequency factors vary, depend on the specified temperature range and reaction order. By approximating the pyrolysis stages into four temperature ranges for reaction order of one and into five ones for reaction order of two and three, it was obtained that the activation energy values are from 6.90 to 203.10 kJ/mol and frequency factor values ranges from 1.283E-01 to 7.07E+15.

Indexing

Keywords

pyrolysis; kinetics; oil-palm shell; activation energy; frequency

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