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**MODERN TECHNOLOGY FOR FORECASTING NATURAL  
DISASTERS AND THEIR SIGNIFICANCE FOR HUMANITY**

Siwakorn Vilaivong<sup>1</sup>

*Samara National Research University, Samara, Russian Federation*

Scientific Supervisor: E. A. Efimova, Doctor of Economics  
*Samara National Research University, Samara, Russian Federation*

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Disasters are disruptive events which caused negative impact toward life, property, economic and environment. They can be originated from nature and human, and often occurred in large scale. In 21<sup>st</sup> Centuries, many researchers suggested that the rate of natural disasters will increase from climate change. The rising global temperature will lead to the formation of climate-related disaster, such as storm, flood, drought and wildfire. Population growth and expansion of human settlement into high-risk area also led to inevitably economic damages [1].

Although unpredictable, humanities are doing their best to prepare for such overwhelmingly situation. Scientist and engineer have adapted existed technology for uses in disaster sphere and useful tools which lessen the workload of field responder, for example, unmanned drones, initially designed for military uses, are now being deployed to conduct search and rescue mission in inaccessible terrain. Disaster-related and mobile application developer also work together to create useful warning system, such as Trilogy Emergency Relief Application (TERA), allowing people to communicate the rescue team directly. Project Serval, a communication app which work even during network blackout, and SHAKEALERT, a warning system which notifies people about possible earthquake in United States [2].

In addition to technological development, the global community also united under Sendai Framework in 2015, a United Nations agreement equivalent of the famous Sustainable Development Goals (SDG), which advocated for global reduction of disaster impact through better understanding, governance, investment and resilience. However, recently in 2021, United Nations Office for Disaster Risk Reduction (UNDRR), release a summary of international progress in Sendai Framework, the report shows that there are lack of commitment in financing of Official Development Assistance (ODA), the expenditure remained at 0.39 percent since 2010 while the goal is 0.70 percent, and only 133 billion out of 1.17 trillion US dollars were allocated for disaster risk reduction, to simplified, every 100 US dollars of ODA since 2010, only 50 cents went toward disaster risk reduction. In addition, there are thousands of sciences and technology program

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<sup>1</sup> Siwakorn Vilaivong, Student Group 7121-380402D,  
email: SVilaivong@hotmail.com

related to disaster risk reduction, but only 29 participants out of 187 members engaged in technological transfer. Humanity have achieved certain level of disaster resilience, thanks to Sendai Framework, which identified the action plan for government to handle disaster risks, however, the issues of poor resource allocation and limited participants must be fixed [3].

For centuries, humanity faced hardship from disaster such as the Black Plague, Chernobyl incident, and Hurricane Katrina. Evidence also suggested that disasters were behind the fall of some ancient civilization such as the Mayan Empire and Tang Dynasty, and will continues to poses a threat. In accordance with rising occurrence, the development and investment of disaster risk reduction technology are needed, to ensure the survival of modern civilization.

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### **СИНТЕЗ N-ГИДРОКСИСУЛЬФОНИРОВАННЫХ ПРОИЗВОДНЫХ 1,2,4-ТРИАЗОЛА**

С. А. Виноградов<sup>1</sup>

*Самарский национальный исследовательский университет  
имени академика С.П. Королева, г. Самара, Российская Федерация*

*Научный руководитель: З. П. Белоусова, д.х.н., профессор  
Самарский национальный исследовательский университет  
имени академика С.П. Королева, г. Самара, Российская Федерация*

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В настоящее время актуальным является вопрос о создании новых лекарственных средств на основе 1,2,4-триазолов, обладающих большими синтетическими возможностями.

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<sup>1</sup> Виноградов Сергей Александрович, студент группы 4201-040101D,  
email: seregavino16@gmail.com