

# Preface

The annual International Scientific Applied Conference "Problems of Emergency Situations" (PES, May 19, 2022, Kharkiv, Ukraine) is organized by the National University of Civil Defence of Ukraine (Ukraine, Kharkiv). As partners involved colleagues from the Odessa State Academy of Civil Engineering and Architecture (Ukraine, Odessa).

The conference was attended by scientists from 11 countries of the world – Ukraine, Israel, Poland, USA, Turkey, Germany, Sweden, Lithuania, Azerbaijanian Republic, Czech Republic and Slovakia.

The purpose of the conference was to discuss issues related to the problems and prospects of the introduction of the latest developments and technologies aimed at preventing emergencies, minimizing its consequences in field of civil defense, sharing experience and finding new facets of scientific cooperation, solving problems of recent emergencies and create a global threat to humanity.

The scientific program of the conference included plenary and sectional reports in the following areas:

1. Emergency prevention.
2. Scientific and practical aspects of monitoring and management in the field of civil protection.
3. Emergency response and elimination of their consequences.
4. Chemical technology and engineering, radiation and chemical protection.
5. Environmental safety and labor protection.

Readers will find here studies on using special software applications for modelling of technological process of manufacturing gear wheels and modelling a lathe with the design of standard layout schemes based on the upgraded spindle assembly.

The wide use of unmanned aerial vehicles and video communication systems for the identification of emergencies are the mainstream topics in modern systems of civil protection. Some research results on these issues are presented in this publication also.

The book will be interesting for many specialists whose activities are connected to engineering design in machinery and the creation and exploitation of systems for the identification of emergencies.