

# CONVERSION OF RENEWABLE KINETIC ENERGY OF WATER: SYNTHESIS, THEORETICAL MODELING, AND EXPERIMENTAL EVALUATION

ION BOSTAN

*Technical University of Moldova, Chisinau, Moldova*

ADRIAN V. GHEORGHE\*

*Old Dominion University, Norfolk, VA, USA*

VALERIU DULGHERU, VIOREL BOSTAN,  
ANATOL SOCHIREANU, ION DICUSARĂ

*Technical University of Moldova, Chisinau, Moldova*

**Abstract.** The current paper deals with concepts for conversion of the kinetic energy of fluent water into mechanical and finally electrical energy. A distinct objective is the study of the energetic potential of the Republic of Moldova's rivers – the Nistru, Prut, and Răut, in view of assuring energy security for limited kind of applications. The study of the energetic potential of the Prut River – an affluent of the Danube, that flows through the Republic of Moldova's territory has been carried out. On the basis of the performed study, the future installation place of the pilot plant of microhydrostation was chosen, that satisfies the following conditions: adequate harvest of low level speed of the water flows; existence of the energy consumers nearby; geological characteristics of the water front, which would permit the connective foundation installation of the microhydrostation with the river bank.

## Introduction

Energy, a complex resource, is the key in searching of a continuous sustainable development for human society. The effects of the air pollution and of the climatic changes over the surrounding environment impose, in a striking way, the increasing necessity of exploring renewable energy resources. For the Republic of Moldova the usage of the renewable energy resources is important both from economical and political points of view, because the country does not possess its

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\* To whom correspondence should be addressed: Adrian V. Gheorghe, Old Dominion University, Norfolk, VA, USA, e-mail: [adriangheorghe9145@gmail.com](mailto:adriangheorghe9145@gmail.com)