



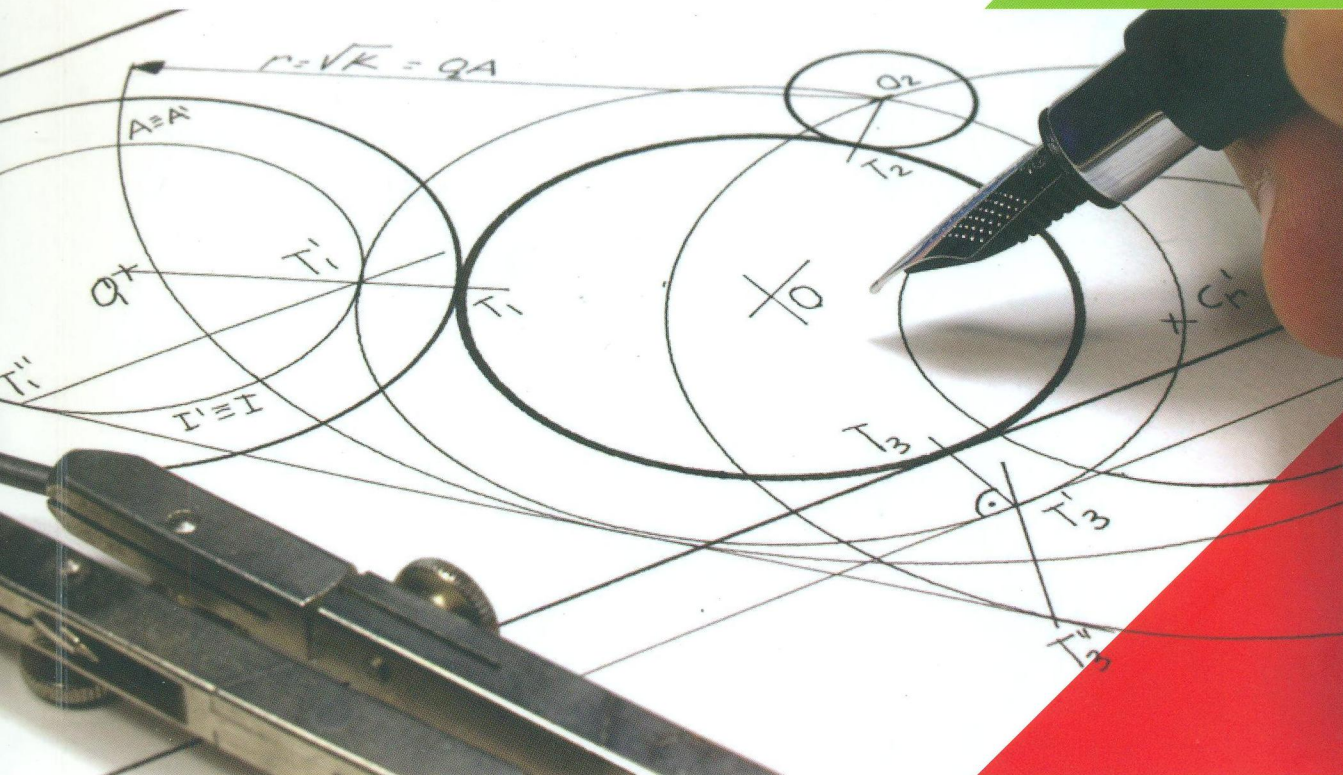
جامعة أبوظبي  
ABU DHABI UNIVERSITY



مركز الإمارات للدراسات والبحوث الاستراتيجية  
The Emirates Center for Strategic Studies and Research

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**Mathematical Science and its Applications**

**ABSTRACTS BOOK**



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## **On the Summation of Some Divergent Series Associated with the Zeta Functions**

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We use an original summation technique to obtain finite and explicit sum formulas for some divergent series associated with the zeta and related functions. We show that the sums of such series are expressed in terms of Bernoulli numbers. By considering Bernoulli polynomials, we find the finite formulas for the sums of certain divergent series of Euler and some other infinite series involving the zeta functions. The possible application of the summation technique and formulas obtained to the evaluation of the Riemann zeta function at odd positive integers is discussed.

## **About One Mathematical Method of Autopsy of the Reservoir and Production Difficulty of Recoverable Oil**

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The paper is about a reasonableness of a certain mathematical model of non-equilibrium phase transitions of water in porous media without a consideration of moisture migration. Several methods of oil extraction from productive stratum are known. But contemporary experience requires further improvement. Those problems have attracted attention not only of oil industry specialists, but also of professionals in other industries for a long time. The specified method and its corresponding mathematical models are more widely implemented in Kazakhstan. That fact is related with hardly recoverable nature of oil deposits.