

**Acta Universitatis Sapientiae**

**Electrical and Mechanical  
Engineering**

Volume 16, 2024

Sapientia Hungarian University of Transylvania  
Scientia Publishing House



## Contents

<i>S. Zengah, A. Baltach, A. Djebli, A. Benhamena</i>	
<b>Compilation of Stress Concentration Factors in the Vicinity of a Geometric Discontinuity in Structures.....</b>	<b>1</b>
<i>A. Belhanafi, O. Ladjedel, L. Adjllout</i>	
<b>Effect of Blade Number of an Anchor Agitator on the Laminar Flow in a Cylindrical Vessel .....</b>	<b>16</b>
<i>M. C. Malti, Z. Sari Hassoun, K. Aliane, Y. Rekiouk, B. di Pierro, M. A. Kherrafi</i>	
<b>Numerical Analysis of Efficiency Improvement in Flat Plate Solar Collectors using Offset Strip Fins .....</b>	<b>26</b>
<i>A. Aboura, A. Abdou, T. Bouchala, M. Chebout, B. Abdelhadi, M. Khabel</i>	
<b>Reconstruction of Defect Paths Using Eddy Current Testing Array 3D Imaging .....</b>	<b>38</b>
<i>T. Javanbakht, S. Laurent, D. Stanicki, E. David</i>	
<b>Comparative Study of Dielectric Properties and Other Physical Properties of Superparamagnetic Iron Oxide Nanoparticles and Polyethylene Nanocomposites.....</b>	<b>48</b>
<i>J. Zbojovský, R. Cimbala</i>	
<b>Effect of Thermal Ageing on the Electrical Insulation Properties of the Oil-Paper Insulation .....</b>	<b>63</b>
<i>S. Bucko, R. Cimbala</i>	
<b>Thermal Dependence of Ferrofluids Dielectric Response .....</b>	<b>75</b>
<i>M. Pavlík, M. Kolcun, D. Mazur</i>	
<b>Analysis of Hot Spots on Photovoltaic Panels .....</b>	<b>86</b>
<i>F. Margita, L. Beňa</i>	
<b>The use of WAM Systems for Determining the Ampacity of Overhead Power Lines .....</b>	<b>96</b>
<i>M. M. Ahmed</i>	
<b>Adaptive Digital Notch Filter for Enhanced Stability in Grid-Connected Inverter Systems .....</b>	<b>110</b>

<i>J. Király, D. Medved</i>	
<b>Operation of V2G Chargers in Smart Grids .....</b>	<b>124</b>
<i>D. Medved, M. Kolcun, J. Király, D. Mazur</i>	
<b>Power Management and Charging Strategies for Electric Vehicles .....</b>	<b>135</b>
<i>Á. Czimbalmos, Á. Fehér, L. Márton</i>	
<b>Model Predictive Control of Aerodynamic Levitation Systems .....</b>	<b>149</b>
<i>K. Ferencz, E. Rigó, J. Domokos, L. Kovács</i>	
<b>Implementation of Network Data Analysis Using the Neo4j Graph Database .....</b>	<b>162</b>