



## Vol 33 No 2 (October 2024): Acta graphica

**Publisher:**

University of Zagreb Faculty of Graphic Arts, Zagreb, Croatia

**Editor:**

prof. PhD. Ivana Bolanča Mirković<sup>1</sup>

**Technical editor:**

assoc. prof. PhD. Miroslav Mikota<sup>1</sup>, PhD. Tomislav Hudika<sup>1</sup>

**Co-Editors:**

assoc. prof. PhD. Tomislav Cigula<sup>1</sup>, assoc. prof. PhD. Rahela Kulčar<sup>1</sup>, asst. prof. PhD. Marina Vukoje<sup>1</sup>

**Committee:emer.**

Prof. dr. sc. Stanislav Bolanča<sup>1</sup>, PhD, Aleksandra Bernašek Petrine<sup>15</sup>, prof. PhD. Maja Brozović<sup>1</sup>, PhD. Lionel Chagas<sup>2</sup>, prof. PhD. Edit Csanák<sup>3</sup>, prof. PhD. Martinia Ira Glogar<sup>4</sup>, prof. PhD. Mirna Habuda-Stanić<sup>5</sup>, assoc. prof. PhD. Hajdek Krunoslav<sup>6</sup>, prof. PhD. Lidija Jakobek Barron<sup>5</sup>, prof. PhD. Kašiković Nemanja<sup>7</sup>, prof. PhD. Željko Knez<sup>8</sup>, prof. PhD. Marin Miković<sup>6</sup>, prof. PhD. Klementina Možina<sup>9</sup>, prof. PhD. Nikola Mrvac<sup>1</sup>, prof. PhD. Arif Ozcan<sup>10</sup>, prof. PhD. Klaudio Pap<sup>1</sup>, asst. prof. PhD. Irma Puškarević<sup>11</sup>, Col Comdt Prof. Dr Anayath Rajendrakumar<sup>12</sup>, prof. PhD. Milena Reháková<sup>13</sup>, prof. PhD. Raša Urbas<sup>9</sup>, prof. PhD. Damir Vusić<sup>6</sup>, prof. PhD. Zuzanna Žołek-Tryznowska<sup>14</sup>, prof. PhD. Igor Zjakić<sup>1</sup>, prof. PhD. Ivana Žiljak-Stanimirević<sup>1</sup>, emer. prof. PhD. Vilko Žiljak<sup>1</sup>

**Affiliation:**

University of Zagreb, Faculty of Graphic Arts (HR)<sup>1</sup>, Grenoble Institute of Technology, (FR)<sup>2</sup>, Obuda University, RejtőSándor Faculty of Light Industry and Environmental Engineering (HU)<sup>3</sup>, University of Zagreb, Faculty of Textile Technology TTF (HR)<sup>4</sup>, University of Osijek, Faculty of Food and Technology (HR)<sup>5</sup>, University North (HR)<sup>6</sup>, University of Novi Sad, Faculty of Technical Sciences, Department of Graphic Engineering and Design, (RS)<sup>7</sup>, University of Maribor, Faculty of Chemistry and Chemical Engineering (SI)<sup>8</sup>, University of Ljubljana, Faculty of Natural Sciences and Engineering (SI)<sup>9</sup>, University of Marmara, Faculty of Applied Science (TR)<sup>10</sup>, Wichita State University (US)<sup>11</sup>, Deenabandhu Chhotu Ram University of Science & Technology (IN)<sup>12</sup>, Slovak University of Technology in Bratislava, Faculty of Chemical and Food Technology (SK)<sup>13</sup>, Politechnika Warszawska, (PL)<sup>14</sup>, Zagreb University of Applied Sciences (HR)<sup>15</sup>

**Edition:30**

## **CONTENTS**

### **Scientific Paper**

Optimization of flexographic process parameters using taguchi's grey relational analysis technique

Soumen Basak, Saritha P.C, Kanai Chandra Paul

68-83

### **Review Article**

Paper Currency: A systematic review of design, security features, and counterfeit detection

Sonia Sarkar, Arun Kiran Pal

84-97

### **Scientific Paper**

Exploring the photorealistic capabilities of AI image generators: Stable Diffusion, DALL-E mini and dream by WOMBO

Aleksandra Bernašek Petrinec, Ivan Papiga, Katja Milković3, Silvio Plehati

98-107

### **Scientific Paper**

Optimization and application of ray tracing algorithms to enhance user experience through real-time rendering in virtual reality

Nikolina Čule, Tibor Skala, Marko Maričević

108-129