10th INTERNATIONAL SYMPOSIUM
GRAPHIC ENGINEERING AND DESIGN

12 – 14 NOVEMBER, 2020

PROGRAM
Thursday 12 November, 2020

\[ CET – Central European Time \]

8:00–9:30  Login to the CISCO WEBEX MEETINGS PLATFORM

Chairpersons: Nemanja Kašiković, Gojko Vladić

9:30–10:00  Opening ceremony

Plenary lectures

10:00–10:30  NEW APPROACHES IN SMART PACKAGING TECHNOLOGIES
Arif Ozcan

10:30–11:00  LIGNOCELLULOSIC BIO-REFINERY DOWNSTREAM PRODUCTS IN FUTURE PACKAGING APPLICATIONS
Igor Karlovits

11:00–11:30  COLLABORATION IS THE FUTURE OF COMMERCIAL PRINTING
David L. Zwang

BREAK 11:30–12:00
SECTION 1: Paper as a substrate
Chairpersons: Ivana Jurič, Živko Pavlović

12:00  PAPER SURFACE EFFICIENCY AND INKJET COLOUR REPRODUCTION ON INVASIVE AND AGRO RESIDUE PAPERS
Igor Karlovits, Gregor Lavrič

12:15  INFLUENCE OF RECYCLED FIBRES IN PAPER ON THE UV STABILITY OF THERMOCROMIC PRINTS
Rahela Kulčar, Marina Vukoje, Ivana Krajnović, Mirela Rožić

SECTION 2: Printing quality
Chairpersons: Ivana Jurič, Živko Pavlović

12:30  DEVELOPMENTS IN DIGITAL PRINT STANDARDIZATION
Christos Trochoutsos, Anastasios Politis

12:45  COMBINATION OF AM AND FM SCREENING AS SECURITY PRINTED FEATURE
Vereshchagin Vladislav, Pukhova Ekaterina, Khokhlova Margarita

13:00  COMPENSATION OF DEFECTS IN PRINTING PROCESS WITH HISTOGRAM METHODS
Ekaterina Pukhova, Vladislav Vereshchagin

13:15  INVESTIGATION OF PROCESS COLOURS VARIATIONS OF ELECTROPHOTOGRAPHY COLOUR PRODUCTION PRESSES
Iskren Spiridonov, Simeon Yordanov, Rumyana Boeva, Aleksandar Milkov

LUNCH BREAK  13:30-14:30
SECTION 3: Novel technologies  
Chairpersons: Miljana Prica, Ivan Pinčjer

14:30 IMMERSIVE INTERCULTURAL EXPERIENCE FOR GRAPHIC COMMUNICATION STUDIES THROUGH VIRTUAL REALITY  
Mohd Asrizal Razali, Noranis Ismail, Nurzihan Hassim

14:45 COMPUTATIONAL DESIGN USED FOR JEWELRY  
Nikolaos Efklidis, Prodromos Minaoglou, Kyriaki Aidinli, Panagiotis Kyratsis

SECTION 4: Graphic materials and processes efficiency Printing added value and Packaging added value  
Chairpersons: Miljana Prica, Ivan Pinčjer

15:00 THE INFLUENCE OF ARTIFICIAL AGING ON RECYCLABILITY AND MECHANICAL STABILITY OF PHARMACEUTICAL PACKAGING  
Marina Vukoje, Ivana Bolanča Mirković, Martina Bešlić, Gorana Petković

15:15 MECHANICAL AND CHEMICAL RESISTANCE OF THERMOCHROMIC PACKAGING PRINTS  
Sonja Jamnicki Hanzer, Rahela Kulčar, Marina Vukoje, Petra Širol

BREAK 15:30-16:00
SECTION 5: Digital media
Chairpersons: Magdolna Pál, Sandra Dedijer

16:00 THE RELATIONSHIP BETWEEN SOCIAL ROLES OF CONTEMPORARY ART MUSEUMS AND DIGITALIZATION
Atiye Güner, Ismail Erim Gülaçti

16:15 VISUALIZATION OF THE PROCESS-RESOURCE MODEL FOR WORKFLOWS
Thomas Hoffman-Walbeck, Richard Adams II

SECTION 6: Design
Chairpersons: Magdolna Pál, Sandra Dedijer

16:30 ADVERTISING ON CITY BUSES
Ana Dujmović, Nace Pušnik

16:45 JEWELLERY DESIGN AND WEARABLE APPLICATIONS: A DESIGN THINKING APPROACH
Athanasiou Manavis, Ioanna Nazlidou, Tatjana Spahiu, Panagiotis Kyratsis

17:00 INFLUENCES JAPANESE PRINTMAKING ON EUROPEAN PRINT MAKING ART IN THAT CASE OF DEGAS-MANZI PARTNERSHIP
Yeter Beris, Ismail Erim Gülaçti
FRIDAY 13 November, 2020

**CET – Central European Time**

8:30–9:30    Login to the CISCO WEBEX MEETINGS PLATFORM

**Chairpersons:** Ivana Tomić, Neda Milić

**Presentations from industry:**

09:30  Tom De Langhe (Xeikon-Flint Group)

10:00  Stanislava Stojanovic Novoselac (Eton Digital)

10:30  Ivica Marković (Alfa Digital d.o.o.)

11:00  Geert Lenvain (Electronics for Imaging - EFI)

11:30  Krzysztof Pachulski (Epic Games)

12:00  Tešo Mojić, Zlatko Panić, Borjan Divljanović (Mojić d.o.o.)

**NOTE:** For all questions for the recorded presentations contact the authors or send an email to grid_info@uns.ac.rs.

**SECTION 1: Design**

12:30  **OBSERVATION ON CREATIVITY AND SPATIAL VISUALISATION SKILLS OF GRAPHIC ARTS’ STUDENTS**  
*Helena Gabrijelčič Tomc, Tanja Nuša Kočevar*

12:45  **APPLYING GRAPHIC DESIGN PRINCIPLES ON TEA PACKAGING**  
*Dorotea Kovačević, Maja Brozović, Dubravko Banić*
SECTION 2: Novel technologies

13:00 ANALYSIS OF OBSERVING AND RECOGNITION PROFILE FACIAL IMAGES USING EYE TRACKING SYSTEM
Andrej Iskra, Helena Gabriječič Tomc

13:15 3D PRINTING AND FUNCTIONALIZATION OF TEXTILES
Marjeta Ćuk, Matejka Bizjak, Deja Muck, Tanja Nuša Kočevar

SECTION 3: Digital media

13:30 DEVELOPMENT OF CHILDREN’S COGNITIVE ABILITIES THROUGH INTERACTIVE APPLICATIONS
Filip Mauzner, Lidija Mandić, Ana Agić, Jesenka Pibernik

13:45 USE OF CODECS IN VIDEO UPLOADS
Andrej Učakar, Patricija Selič, Raša Urbas

14:00 EVALUATION OF THE IMPACT OF AN AWARENESS-BASED ANIMATION ON STUDENTS’ KNOWLEDGE ABOUT MENTAL ILLNESS
Mojca Plot, Saška Roškar, Helena Gabriječič Tomc

14:15 USE OF PREPRESS AUTOMATION IN THE CZECH REPUBLIC AND EXAMPLES OF AUTOMATED PROCESSING FOR SELECTED PREPRESS TASKS
Petr Roudný, Markéta Držková

BREAK 14:30-15:00

SECTION 4: Packaging added value section

15:00 CONSUMER’S EXPERIENCE OF TEA PACKAGING AS ENVIRONMENT-FRIENDLY
Jesenka Pibernik, Tamara Tomašegović, Sanja Mahović Poljaček, Anđela Madžar

15:15 PROMOTIONAL PACKAGING FROM CARTON OF INVASIVE ALIENT PLANT
Kaja Klančar, Urška Vrabič Brodnjak

15:30 CHILD-RESISTANT FEATURES OF PHARMACEUTICAL PACKAGING IN THE EGYPTIAN AND GLOBAL MARKET; A COMPARATIVE STUDY
Mai Ahmed S. Hussein, Mohamed Attia, Noha Mohamed

15:45 BIOBASED INTELLIGENT PACKAGING APPLICATION
Asli Beyler Çigil

16:00 PACKAGING DESIGN AND TESTING BY EYE TRACKING
Gregor Franken
SECTION 5: Printing added value

16:15 EVALUATION OF ZIPPER TEAR STRIP DESIGN STRUCTURE FOR PAPERBOARD PACKAGING  
Josip Bota, Gorana Petković

16:30 INVESTIGATION OF THE OPTICAL PROPERTIES OF CHITOSAN AND RICE STARCH BLENDS, AS A FILLER IN PAPER OR AS A FILM FOR PACKAGING APPLICATIONS  
Urška Vrabič Brodnjak, Dimitrina Todorova

16:45 INVESTIGATION ON THE PRINTABILITY OF SPECIALTY PAPERS FOR LUXURY LABELS  
Dimitrina Todorova, Nevena Pavlova

17:00 THE INFLUENCE OF PCL-ZNO COATING COMPOSITION ON COATED OFFSET CARDBOARD PRINTS  
Tomislav Cigula, Tomislav Hudika, Mihael Katana, Marina Golik Krizmanić, Tamara Tomasegović

17:15 PCL-TiO2 NANOCOMPOSITE TO IMPROVE AGEING OF OFFSET PRINTS  
Tomislav Hudika, Tomislav Cigula, Mihaela Žličarić, Maja Strižič Jakovljević

BREAK 17:30-17:45

SECTION 6: Graphic materials and processes efficiency

17:45 THE PRODUCTION OF ECOFRIENDLY BIOFILM WITH NATURAL OIL FOR FOOD PACKAGING  
Emine Arman Kandirmaz, Omer Bunyamin Zelzele

SECTION 7: Printing quality

18:00 PROSPECTS FOR THE FUTURE OF COMMERCIAL PRINTING  
Csaba Horváth, László Koltai, Klaudia Maňurová

18:15 THE EFFECT OF DEINKING AND BINDER TYPE ON INKJET PRINT QUALITY  
Arif Ozcan, Emine Arman Kandirmaz, Omer Bunyamin Zelzele
SECTION 8: Paper as a substrate

18:30 SUSTAINABLE CARDBOARD LABEL PRODUCTION
   Gulsah Yilan, Arif Ozcan, Tanju Caglar

18:45 THE PRODUCTION OF FLAME RETARDANT PAPER WITH DOPO
   Hatice Birtane

19:00 THE EFFECT OF THE VIRGIN FIBERS TO THE PROPERTIES OF DIFFERENT PAPER PRODUCTS
   Tibor Czene, László Koltai
SATURDAY 14 November, 2020

11:00 - 12:00  POSTER SECTION

Posters will be available on the symposium website from 11 am to 12 am (CET). For all questions, contact the authors or send an email to grid_info@uns.ac.rs.

SECTION 1: Graphic materials and processes efficiency

THE EVALUATION OF THE ORGANIC LOAD OF THE WASTE OFFSET DEVELOPER WITH EXTRACTION METHODS
Savka Adamović, Ivan Pinčjer, Bojan Banjanin, Stefan Đurđević, Nada Miketić

A MINI REVIEW: OPTIMAL DYE REMOVAL BY FENTON PROCESS CATALYSED WITH WASTE MATERIALS
Aleksandra Kulić Mandić, Milena Bečelić-Tomin, Đurđa Kerkez, Gordana Pucar Milidrag, Vesna Pešić, Miljana Prica

PASTA PACKAGING WITH BIO-BASED BARRIER TO PREVENT INSECT INFESTATION
Urška Vrabič Brodnjak, Pasquale Trematerra

INVESTIGATIONS ON BOOK CUTTING BY CIRCULAR KNIFE WITH ECCENTRIC BLADE MOVEMENT
Georgij Petriaszwili, Piotr Janicki, Serhii Komarov

FENTON-LIKE OXIDATION OF FLEXOGRAPHIC WATER-BASED KEY (BLACK) DYE: A DEFINITIVE SCREENING DESIGN OPTIMIZATION
Vesna Gvoić, Miljana Prica, Đurđa Kerkez, Ognjan Lužanin, Aleksandra Kulić Mandić, Milena Bečelić-Tomin, Dragana Tomašević Pilipović

APPLICATION OF ADVANCED OXIDATION PROCESS FOR THE REMOVAL OF SYNTHETIC WATER-BASED PRINTING DYE AND MICROPLASTICS FROM AQUEOUS SOLUTION
Miljana Prica, Aleksandra Tubić, Maja Lončarski, Vesna Gvoić, Sanja Vasiljević, Živko Pavlović, Jasmina Agbaba

EXPLORING THE VARIOUS PARAMETERS OF CO2 LASER IN THE CUTTING OF PAPER
Ivan Pinčjer, Nada Miketić, Ivana Tomić, Savka Adamović

PRELIMINARY ANALYSIS OF IMAGE PROCESSING-BASED EVALUATION OF EMBOSSSING QUALITY
Magdolna Pál, Bojan Banjanin, Sandra Dedijer, Gojko Vladić, Gordana Bošnjaković

STATISTICAL ANALYSIS OF THE INFLUENCE OF PRINT RUN ON SURFACE ROUGHNESS OF DIGITAL FLEXO PRINTING PLATES' SOLID TONE AREAS
Sandra Dedijer, Magdolna Pál, Stefan Poljak, Živko Pavlović, Ivana Jurič, Neda Milić Keresteš

TREATMENT OF WASTE WATER CONTAINING PRINTING DYES: SUMMARY AND PERSPECTIVES
Đurđa Kerkez, Milena Bečelić-Tomin, Gordana Pucar Milidrag, Vesna Gvoić, Aleksandra Kulić Mandić, Anita Leovac Mačerak, Dragana Tomašević Pilipović
SECTION 2: Education

3D PRINTING IN THE EDUCATION OF GRAPHIC ENGINEERING AND DESIGN STUDENTS
Banjanin Bojan, Pál Magdolna, Dimovski Vladimir, Savka Adamović, Ana Lilić

CLASSIFICATION IN SCIENTIFIC AND TECHNICAL WRITING
Jelisaveta Šafranj, Marina Katić, Jelena Zivlak

ECONOMIC DISCOURSE AND VISUAL CONFIGURATION
Alpar Lošonc, Andrea Ivanišević

SECTION 3: Packaging added value

PACKAGING PAPER COATED WITH PLA
Diana Gregor-Svetec, Tadeja Šumrada

ECO-FRIENDLY MATERIAL FOR PACKAGING
Laura Gegeckiene, Ingrida Venyte

RESEARCH METHODOLOGIES FOR ASSESSING THE ERGONOMICS OF PACKAGING PRODUCTS - A REVIEW
Gordana Bošnjaković, Gojko Vladić

SECTION 4: Novel technologies

3D PRINTED JEWELLERY DESIGN PROCESS BASED ON SCULPTURE INSPIRATION
Karin Košak, Deja Muck, Marijeta Čuk, Tanja Nuša Kočevar

STUDY OF 4D PRIMITIVES’ SELF-TRANSFORMATION
Matej Pivar, Deja Muck

DEVELOPMENT OF PRODUCTS STATE IDENTIFICATION APPLICATION
Stefan Đurđević, Dragoljub Novaković, Željko Zeljković

EYE TRACKING STUDY OF FRONT AND PROFILE FACE IMAGE OBSERVATION AND RECOGNITION
Andrej Iskra

SECTION 5: Typography

INFLUENCE OF WHITE SPACE ON TEXT SCANNING
Kata Jovančić, Neda Milić Keresteš, Uroš Nedeljković

THE EFFECT OF CONTROLLING THE WEIGHT VARIABLE ON THE TYPEFACE ATTRIBUTE ASSESSMENT
Jelena Žarko, Uroš Nedeljković

KINETIC TYPOGRAPHY - FIGURATION AND TECHNOLOGY
Nikolina Stanič Loknar, Diana Bratić, Ana Agić

AI DRIVEN OCR: RESOLVING HANDWRITTEN FONTS RECOGNIZABILITY PROBLEMS
Diana Bratić, Nikolina Stanič Loknar
SECTION 6: Design

THE POWER OF COMMEMORATIVE BANKNOTE DESIGN TO SUPPORT GLOBAL AND LOCAL EVENTS
Khloud Khaled Ahmed

DESIGNING PARTERRES ON THE MAIN CITY SQUARES
Milena Lakićević, Ivona Simić, Radenka Kolarov

DESIGN SOLUTIONS OVERVIEW OF UNIVERSAL MOTOR GEAR DRIVES WITH HELICAL GEARS
Milan Rackov, Ivan Knežević, Maja Čavić, Marko Penčić, Dijana Čavić, Siniša Kuzmanović

SECTION 7: Printing added value

COLORIMETRIC CHANGES OF WATERBASED FLEXOGRAPHIC INK PRINTED ON HEMP-BASED PAPERS EXPOSED TO ARTIFICIAL AGEING
Ivana Plazonić, Irena Bates, Vesna Džimbeg-Malčić, Davor Zember

THE INFLUENCE OF TOTAL BASE INK COVERAGE ON THE UNIFORMITY OF DIGITAL PRINTS OVERPRINTED WITH PEARLESCENT INKS
Ivana Tomić, Ivan Pinčjer, Nada Miketić

MATHEMATICAL MODELLING OF OPTICAL DENSITY ON THE EXAMPLE OF PRODUCING RASTERIZED FILMS
Bohdan Durnyak, Mikola Lutskiv, Vitalij Buben, Petro Shepita, Georgij Petriaszwili, Zuzanna Żołek-Tryznowska

INFLUENCE OF DIGITIZATION INPUT DEVICE ON CALCULATION OF PRINT (NON)UNIFORMITY VALUE OF PRINTS USING ISO 13660 METHOD
Ivana Jurič, Dragoljub Novaković, Nemanja Kašiković, Sandra Dedijer

THE EFFECTS OF FRAGRANCED MICROCAPSULES APPLICATION ON THE PHYSICAL AND PRINT QUALITY CHARACTERISTICS OF THE PRINTS
Rastko Milošević, Nemanja Kašiković, Živko Pavlović, Saša Petrović, Dragan Kukuruzović, Raša Urbas

SECTION 8: Printing quality

ANALYSIS OF RASTER IMPRINTS PARAMETERS ON THE BASIS OF MODELS AND EXPERIMENTAL RESEARCH
Bohdan Durnyak, Mikola Lutskiv, Georgij Petriaszwili, Petro Shepita

COLOUR QUALITY TESTING OF CYAN OFFSET PRINTS DEPENDING ON PIGMENT CONCENTRATION AND DIFFERENT CTP SCREENING MODE
Sandra Mustač, Igor Majnarić, Stanko Bauk, Slaven Miloš

INFLUENCE OF INKJET PRINT PARAMETERS ON THERMAL RESISTANCE OF PRINTED KNITWEARS
Mladen Stančić, Branka Ružičić, Đorđe Vujčić, Dragana Grujić, Miroslav Dragić, Bojan Janković
FACTORS INFLUENCING MECHANICAL PROPERTIES OF POLYURETHANE FOAMS USED IN COMPRESSIBLE FLEXOGRAPHIC SLEEVES
Saša Petrović, Nemanja Kašiković, Željko Željković, Rastko Milošević

SECTION 9: Digital media

THE ANALYSIS OF GRAPHIC DESIGN PLATFORMS USED IN SOCIAL MEDIA MARKETING
Ksenija Mitrović, Anja Jakšić, Jelena Spajić

ANALYSIS OF THE LOADING ANIMATION PERFORMANCE AND VIEWER PERCEPTION
Gojko Vladić, Selena Mijatović, Gordana Bošnjaković, Ivana Jurić, Vladimir Dimovski

ELECTRONIC PUBLISHING AS A GRAPHIC PRODUCT
Željko Željković, Dragoljub Novaković, Saša Petrović, Neda Milić Keresteš, Stefan Đurđević

SECTION 10: Paper as a substrate

MEASUREMENTS OF SURFACE FREE ENERGY AS A TOOL TO ASSES THE EFFECT OF VARNISHING AND PRINTING OF THE PAPER SUBSTRATES
Zuzanna Żołek-Tryznowska, Marta Więcek

ADHESION STRENGTH OF TEMPERATURE VARIED NANOCELLULOSE ENHANCED WATER BASED PAPER AND CARDBOARD ADHESIVES
Barbara Šumiga, Igor Karlovits, Boštjan Šumiga

12:00 End of the conference