

Annual Conference of the Society for Structural Integrity and Life (DIVK) in cooperation with ESIS TC15 and TC18

The ESIS TC18, TC15 and DIVK Annual Conference was held online and live (hybrid) on November 9, 2021 at the Faculty of Mechanical Engineering, University of Belgrade, and was dedicated to the founder of DIVK, Prof. Dr. Stojan Sedmak. The collaboration with ESIS TC18 was also the first event in which the newly formed TC18 participated. The scope of TC18 is *Structural Integrity of Welded Joints*, and is dedicated to the memory of Prof. Stojan Sedmak who strongly contributed to ESIS, and Paolo Lazzarin (<https://sites.google.com/structuralintegrity.eu/tc18>). The collaboration with TC15 (<https://sites.google.com/structuralintegrity.eu/tc15>) has evolved thanks to the joint activities on H2020 project SIRAMM (Structural Integrity and Reliability of Advanced Materials obtained through Additive Manufacturing) with Polytechnic University of Timisoara (UPT, Romania), Norwegian University of Science and Technology (Norway), the University of Parma (Italy), Institute of Physics of Materials from Brno (Czech Rep.), and the Faculty of Mechanical Engineering, University of Belgrade (Serbia).

The Conference Agenda consisted of 5 morning presentations and 6 presentations in the afternoon session, with introductory talks by officials from ESIS TC15, TC18 and DIVK:

- 10:00-10:30, Introduction: Paolo Ferro (TC18), Filippo Berto (TC15), Aleksandar Sedmak (DIVK)
- 10:30-11:00, Øystein Grong, Filippo Berto: Hybrid metal extrusion & bonding (HYB) – mechanical integrity of some similar and dissimilar butt joints produced by HYB
- 11:00-11:30, Paolo Ferro: Residual stresses in welded joints and additively manufactured components – an overview
- 11:30-12:00, Filippo Berto: Structural integrity of weldments
- 12:00-12:30, Vencislav Grabulov: 120 years of Charpy testing with focus on welded joints
- 12:30-13:00, Aleksandar Sedmak: Weldment fracture mechanics – homage to Prof. Stojan Sedmak
- 14:00-14:30, Aleksandar Grbović: Numerical simulation of fatigue crack growth in Al welded structures
- 14:30-15:00, Mihajlo Arandjelović: Influence of multiple defects on welded joints integrity
- 15:00-15:30, Aleksa Milovanović: Fracture mechanics testing of PLA polymer and PLA-X composite
- 15:30-16:00, Isaak Trajković: Fracture behaviour of ring shape specimens made of AMM
- 16:00-16:30, Marko Rakin, Bojan Medo: Micromechanical modelling of cracked welded joints made of HSLA steel
- 16:30-17:00, Simon Sedmak, Aleksandar Sedmak: xFEM simulation of fatigue crack growth in different regions of a welded joint

Godišnja Konferencija Društva za integritet i vek konstrukcija (DIVK) u saradnji sa ESIS TC15 i TC18

ESIS TC18, TC15 i DIVK Godišnja Konferencija održana je užiivo 9. novembra 2021, na Mašinskom fakultetu Univerzitea u Beogradu i onlajn (hibridno), a posvećena je osnivaču DIVK-a, prof. dr Stojanu Sedmaku. Saradnja sa ESIS TC18 je bila ujedno i prvi događaj u kome je novoformirani TC18 učestvovao. Inače TC18 se bavi *Integritetom zavarenih spojeva (Structural Integrity of Welded Joints)*, a posvećen je Prof. Stojanu Sedmaku i Paolo Lazzarin-u (<https://sites.google.com/structuralintegrity.eu/tc18>). Saradnja sa TC15 (<https://sites.google.com/structuralintegrity.eu/tc15>) je usledila zahvaljujući radu na H2020 projektu SIRAMM (Integritet konstrukcija i pouzdanost naprednih materijala, dobijenih aditivnom proizvodnjom) u kojem učestvuju Politehnički Univerzitet u Temišvaru (UPT, Rumunija), Norveški Univerzitet Nauke i Tehnologije (Trondhjem, Norveška), Univerzitet u Parmi (Italija), Institut za Fiziku Materijala – Brno (Češka Rep.) i Mašinski fakultet Univerziteta u Beogradu.

Dnevni red Konferencije obuhvatio je 5 predavanja u prepodnevnoj i 6 predavanja u poslepodnevnoj sekciji, uz uvodna izlaganja predstavnika ESIS TC15, TC18 i DIVK-a:

Weldment Fracture Mechanics

Prof. Aleksandar Sedmak, University of Belgrade, Serbia
DIVK annual conference, 9.11.2021, in coop. with ESIS
TC15 & TC18, **dedicated to Prof. Stojan Sedmak**



Prof. Stojan Sedmak
(1929-2014)

Introductory slide from the presentation by A. Sedmak.