

Institut za ispitivanje materijala a.d.



Institute for Testing Materials

Novosti iz instituta za ispitivanje materijala (IMS)

FORMIRANJE NOVOG UPRAVNOG ODBORA IMS

Rešenjem Vlade Republike Srbije o imenovanju predstavnika Vlade u Upravni odbor Instituta za ispitivanje materijala a.d, Beograd, od 25.10.2007. godine, broj 119-7053/2007, imenovan je novi Upravni odbor Instituta za ispitivanje materijala u sledecem sastavu:

Predsednik

Prof. dr **Miloš Grujić**, redovni profesor Rudarsko-geološkog fakulteta Univerziteta u Beogradu

Članovi koje imenuje većinski vlasnik:

Nenad Smiljanić, dipl. ing. geofizike, Geomagnetni zavod, Grocka, Beograd

Marko Mandić, dipl. ing. elektrotehnike, Micromace Group, Beograd

Jovanka Adamović, dipl. ing. rudarstva, Holding korporacija „Šamot Rudnik“, Arandelovac

Zorica V. Marković, dipl. mašinski inženjer, „Kolubara Građevinar“, Lazarevac

Mladen B. Mladenović, dipl. maš. inženjer, Institut za ispitivanje materijala a.d., Beograd

Članovi Upravnog odbora, predstavnici akcionara, saradnici Instituta za ispitivanje materijala, odlukama 93, 94 i 95 sa VII vanredne sednice Skupštine akcionara Instituta IMS održane 15. 12.2007. godine (delovodni broj 200-15713 od 27.12.2007. god.):

Nada Stegnjaić Đikanović, dipl. ekonomista, Institut za ispitivanje materijala a.d. Beograd

Marko Prica, dipl. ing. građevine, Institut za ispitivanje materijala a.d. Beograd

Marko Vučković, dipl. ing. građevine, JP „Putevi Srbije“, Beograd

News from the Institute for Testing Materials (IMS)

FORMING THE NEW IMS GOVERNING BOARD

According to the resolution of the Government of the Republic of Serbia on appointing the government representative to the Governing Board of the Institute for Testing Materials (IMS), Belgrade, of Oct. 25, 2007, number 119-7053/2007, members of the newly appointed Governing Board of the Institute for Testing Materials are:

President

Prof. Dr **Miloš Grujić**, full professor of the Faculty of Mining and Geology, University of Belgrade

Members, appointed by the majority holder:

Nenad Smiljanić, dipl. ing. geophysics, Geomagnetics Institute, Grocka, Belgrade

Marko Mandić, dipl. ing. elec. engng, Micromace Group, Belgrade

Jovanka Adamović, dipl. ing. mining, Holding corporation “Šamot Rudnik”, Arandelovac

Zorica V. Marković, dipl. ing. mech. engng, “Kolubara Gradjevinar”, Lazarevac

Mladen B. Mladenović, dipl. ing. mech. engng, Institute for Testing Materials (IMS), Belgrade

Governing Board members as shareholder representatives, and partners of the Institute for Testing Materials, according to acts 93, 94 and 95, of IMS shareholders’ assembly special meeting, held on Dec. 15, 2007 (registr. number 200-15713 of Dec. 27, 2007):

Nada Stegnjaić Đikanović, dipl. ecc., Institute for Testing Materials, Belgrade

Marko Prica, dipl. ing. civil engng, Institute for Testing Materials, Belgrade

Marko Vučković, dipl. ing. civ. engng, JP “Putevi Srbije”, Belgrade

PROF. MILOŠ GRUJIĆ – CURRICULUM VITAE

Miloš Grujić je rođen 1946. godine.

Diplomirao je 1970. na Rudarsko-geološkom fakultetu (RGF) u Beogradu, magistrirao 1977. na RGF, a doktorsku disertaciju „Izbor optimalnog sistema transporta u rudnicima sa podzemnom eksploatacijom uglja“ je odbranio 1983. na RGF.

Autor je 8 stručnih knjiga, redaktor i koautor još 6 monografija iz oblasti rudarstva i urednik više zbornika, autor preko 180 naučnih i stručnih radova saopštenih i objavljenih u 15 zemalja.

Služba

Dr Miloš Grujić, dipl. ing. rud. je redovni profesor i šef Katedre za transport i izvoz u rudnicima na Rudarsko-geološkom fakultetu (RGF) u Beogradu, gde je zaposlen od 1972.

Šef je Rudarskog odeljenja RGF je bio u dva mandata, od 1991. do 1995, a rukovodilac Centra za zaštitu životne sredine RGF od 1995. do 2004.

Nalazi se na mestu glavnog urednika međunarodnog časopisa „Transport i logistika“, koji zajednički izdaju Univerzitet u Beogradu i Univerzitet u Košicima, i zamenik je glavnog urednika međunarodnog časopisa „Ekologija i geotehnologija“, koji izdaju Ruska akademija nauka i Univerzitet u Tuli, Rusija.

Bio je član Saveta za rudarstvo Srbije (1995–1997), zamenik predsednika Saveznog komiteta za rudarstvo Jugoslavije (2002), predsednik Upravnog odbora JP Rudarskog basena Kolubara (2004–2005), i predsednik Grupacije za energetsko rudarstvo Privredne komore Srbije (2003–2005).



Miloš Grujić was born in 1946.

He graduated from the Faculty of Mining and Geology (RGF) in Belgrade in 1970, where he received masters degree (1977), and defended doctoral dissertation “The selection of optimal transportation system in the coal mines with underground digging up”, in 1983.

He is author of 8 professional books, co-author of six monographs in the area of mining, editor of several proceedings, author of over 180 scientific and professional papers, published in 15 countries.

Career

Miloš Grujić, Dr (Min. Eng.) is full professor and Chairman of Department for Haulage and Hoisting in Mines at the Faculty of Mining and Geology

(RGF) in Belgrade, where he is employed since 1972.

He was head of Mining Department at RGF in 2 tenures (1991–1995), and manager of the Centre for Environmental Protection at RGF (1995–2004).

He is editor-in-chief of international journal “Transport and Logistics”, jointly published by the University of Belgrade and University of Koshice, and is deputy editor-in-chief of the international journal “Ecology and Geo-technology”, published by the Russian Academy of Science and University in Tula, Russia.

He was member of the Mining Council of Serbia (1995–1997), deputy president of Federal Mining Committee of Yugoslavia (2002), president of the Board of Directors of PC Coal Mines Kolubara (2004–2005), president of Energetics Mining Group of Serbian Economic Chamber (2003–2005).

Naučno-istraživačke i stručne aktivnosti

Profesor Grujić je rukovodilac pet naučno-istraživačkih projekata Ministarstva za nauku Srbije, od kojih su završeni projekti 08M08M1 (1996–2000), ETR 6.01.0217 (2002–2003), i ETR 6641 (2005–2007).

Bio je rukovodilac bilateralnog međunarodnog projekta o transportu i zaštiti životne sredine koji su finansirale vlade Slovačke i Srbije (2003–2005).

Rukovodio je projektom „Okviri za održivi razvoj grada Niša“, 2004, koji je finansirao OEBS.

Predsednik je Jugoslovenskog (srpskog) odeljenja Međunarodne akademije nauka za ekologiju i zaštitu životne sredine (MANEB) od 1977.

On je ekspert Vlade Republike Češke za ocenu projekata iz oblasti rudarstva i zaštite životne sredine, a bio je ekspert Vlade SRJ za rudarstvo (1996–2003) i Ministarstva nauke i Srbije (2003–2005). Bio je član Saveta eksperata Elektroprivrede Srbije (EPS) odgovoran za rudnike sa podzemnom eksploatacijom (1993–1999).

Pored navedenih aktivnosti, prof. Miloš Grujić je učestvovao u više stručnih komisija i ekspertskih timova, formiranih za razmatranje potreba rudarske privrede. Učestvovao je u izradi više od 50 studija, projekata, investicionih programa, revizija, tehničkih pregleda, za sve vrste rudarskih projekata (izuzev nafte i gasa).

Nastavno-obrazovna delatnost

Dr Miloš Grujić je bio profesor na Rudarsko-geološkom fakultetu u Štipu, Univerzitet u Skoplju, Makedonija (1995–2002).

Gostujući je profesor na BERG fakultetu Tehničkog Univerziteta Košice, Slovačka, i profesor je na Fakultetu Tehničkih nauka u Kosovskoj Mitrovici.

Član je Saveta za zaštitu životne sredine Centra za multidisciplinarnu studiju Univerziteta u Beogradu.

Organizacija naučnih i stručnih skupova

Miloš Grujić je stalni član više naučnih odbora međunarodnih simpozijuma i konferencija.

Bio je predsednik je Organizacionog odbora 4 međunarodna simpozijuma „Rudarstvo i zaštita životne sredine“, održanih u Beogradu, (1996, 1998, 2001 i 2003) i predsednik Organizacionog odbora 7 međunarodnih simpozijuma o rudničkom transportu (1990, 1993, 1996, 1999, 2002, 2005 i 2008).

Međunarodna saradnja

Profesor Miloš Grujić je redovni član Međunarodne akademije nauka za ekologiju i zaštitu životne sredine (MANEB).

Inostrani je član Akademije rudarskih nauka Ruske federacije, i redovni član Međunarodne akademije nauka za univerzitetsko obrazovanje.

Član je Upravnog odbora Dunavskog foruma za zaštitu životne sredine (Međunarodna mreža nevladinih organizacija za zaštitu životne sredine, koja obuhvata 13 država sliva Dunava).

Priznanja i nagrade

Profesor Miloš Grujić je počasni doktor nauka MGGU, Moskva.

On je izabrani počasni građanin grada Košice.

Dobitnik je mnogih odlikovanja: medalje Lomonosova za ekologiju i edukaciju, Sankt Petersburg, 2000, medalje za unapređenje saradnje između Univerziteta u Beogradu i Tehničkog univerziteta u Ostravi, Republika Češka, 2000, odlikovanja (srebrna medalja) za unapređenje saradnje između Tehničkog univerziteta Košice, Slovačka, i Univerziteta u Beogradu, zlatne medalje povodom obeležavanja 50-te godišnjice BERG fakulteta iz Košice, Slovačka.

Profesor Miloš Grujić je nagrađen počasnom plaketom – priznanjem Studentske organizacije RGF za najuspešnijeg profesora, 1994.

Scientific research and professional activities

Professor Grujić has headed five scientific research projects of the Serbian Ministry of Science, among them are finished projects 08M08M1 (1996–2000), ETR 6.01.0217 (2002–2003), and ETR 6641 (2005–2007).

He had been leader of the bilateral international project on transport and environment protection, financed by the governments of Slovakia and Serbia (2003–2005).

He managed the project “Frames for sustainable development of Niš City”, 2004, supported by OEBS.

He is the president of Yugoslav (Serbian) department of International Academy of Sciences for Ecology and Environmental Protection (MANEB), since 1977.

He is expert of the Czech Republic Government for evaluation of projects in mining and environmental protection. He was expert for mining of Yugoslav Government (1994–2002), of Serbian Ministry of Science (2003–2005). He was member of Experts Council of Serbian Electric Power Industry (EPS) for underground mining (1993–1999).

In addition to cited activities, Prof. Miloš Grujić participated in several professional committees and expert teams, appointed to meet the needs of the mining industry. He took active part in the completion of over 50 studies, projects, investment programmes, revisions, technical reviews, for all types of mining projects (except the oil and gas).

Lecturing and education activities

Dr Miloš Grujić was professor at the Faculty of Mining and Geology, Štip, University of Skopje, Macedonia (1995–2002).

He is visiting professor at BERG Faculty of Technical University, Koshice, Slovakia, and professor at the Technical Faculty in Kosovska Mitrovica.

He is member of the Environmental Protection Council, Centre for Multidisciplinary Studies, University of Belgrade.

Organisation of scientific and professional meetings

Professor Miloš Grujić is permanent member of several scientific boards of international symposia and conferences.

He was president of the Organising Committee of 4 International Symposia “Mining and Environmental Protection”, held in Belgrade (1996, 1998, 2001 and 2003), and president of Organising Committee of 7 International Symposia on Mine Haulage (1990, 1993, 1996, 1999, 2002, 2005 and 2008).

International cooperation

Professor Miloš Grujić is regular member of the International Academy of Sciences for Ecology and Environmental Protection (MANEB).

He is foreign member of the Academy of Mining Sciences of the Russian Federation, and regular member of the International Academy of Sciences for High Education.

He is member of the Governing Board of Danube Forum for Environment Protection (International Network of Non-governmental Organisations for Environmental Protection that includes 13 countries of the Danube river basin).

Merits and awards

Professor Miloš Grujić is honourable doctor of sciences at MGGU, Moscow.

He is elective honourable citizen of the city of Koshice.

He has received many honours: the Lomonosov Medal for ecology and education, Sankt Petersburg, 2000; the Medal for the Promotion of Cooperation between the University in Belgrade and the Technical University in Ostrava, Czech Republic, 2000; decoration (silver medal) for the Promotion of Cooperation between the Technical University of Koshice, Slovakia and University of Belgrade; gold medal for 50th anniversary of BERG Faculty, Koshice, Slovakia.

Professor Miloš Grujić is awarded the honourable plaque of merit from the RGF Student Organisation as most successful professor (1994).

Upravni odbor Instituta za ispitivanje materijala je na konkursu od 6 kandidata, marta 2008, za direktora Instituta izabrao dr Vencislava Grabulova.

The Governing Board of the Institute for Testing Materials has chosen Dr Vencislav Grabulov as director of the Institute, among 6 other candidates of the March 2008 competition.

DR VENCISLAV GRABULOV – CURRICULUM VITAE

Vencislav Grabulov je rođen u Titovom Velesu (SFRJ) 12.05.1953. Diplomirao je 1976. na metalurškom odseku Tehnološko-metalurškog fakulteta (TMF) Univerziteta u Beogradu, magistrirao 1986. na TMF, a doktorsku disertaciju „Određivanje parametara krive otpornosti primenom potencio-metrijske metode za merenje rasta prsline“ je odbranio 1995. na TMF.

Kao autor ili koautor objavio je više od 150 naučnih i stručnih radova. Vlada engleskim, a služi se ruskim jezikom.

Služba

Dr Vencislav Grabulov je bio zaposlen u Vojno-tehničkom institutu (VTI) u Beogradu od 1976. do prelaska na mesto direktora Instituta za ispitivanje materijala (IMS) 1. aprila 2008. Od 1986–2000 je bio načelnik Istraživačkog odseka Odeljenja za metalne materijale, a od 2000–2008 načelnik Odeljenja za metalne materijale VTI.

Naučno-istraživački i stručni rad

Naučno-istraživački rad dr Vencislava Grabulova u VTI je bio usmeren na razvoj metalnih materijala visoke čvrstoće, pre svega čelika, i na njihovoj karakterizaciji, posebno u pogledu zavarljivosti i otpornosti prema prslinama. Sem projektovanja metala i legura, razvoj obuhvata tehnologiju izrade, prerade i oblikovanja, posebno tehnologiju i metalurgiju zavarivanja, i osiguranje integriteta metalnih konstrukcija u mašinskoj i građevinskoj industriji.

Od 1991, u oblasti metalnih materijala, rukovodi istraživanjima u VTI, koja se odvijaju kroz nekoliko faza sa po više istraživačkih tema, prosečno 15 godišnje. Za neke teme je i neposredno angažovan kao što su nove tehnologije izrade i prerade čelika visoke čvrstoće, ocena zavarljivosti i specifikacije tehnologija zavarivanja čelika visoke i ultravisoke čvrstoće (za komore raketnih motora, pancirnih čelika za oklopna vozila, martenzitno starenih čelika), i aluminijumskih legura visoke čvrstoće (iznad 550 MPa).

Razradio je i uveo u praksu više tehnoloških proba za ocenu zavarljivosti i sklonosti prema pojavi prsline pri zavarivanju, metode mehanike loma, posebno pri udarnom opterećenju, i postupke karakterizacije metalnih materijala.

Razvio je originalni postupak za određivanje dinamičke krive otpornosti ispitivanjem jednog uzorka i primenom metode pada potencijala za praćenje rasta prsline.

U struci se dr Grabulov bavi tehnologijom i kontrolom kvaliteta, tehničkim uslovima za izradu, kontrolu i prijem metalnih delova i sklopova, pre svega u zavarivanju (oklopna tela borbenih vozila, komore raketnih motora, mostovi, plovni objekti). Pri tom je transfer tehnologija do proizvođača važan segment, uz tehnološke analize razvoja i proizvodnje metalnih komponenti vojne opreme, uz pomoć domaće nauke i proizvodnje.

Kao saradnik TMF i Mašinskog fakulteta (MF) Univerziteta u Beogradu, učestvovao je u realizaciji više projekata Ministarstva za nauku Republike Srbije i međunarodnih projekata.

Član je Naučnog veća VTI i Uređivačkog odbora časopisa „Naučnotehnički pregled“.

Nastavno-obrazovna delatnost

Profesionalno i naučno se dr Vencislav Grabulov usavršavao na Međunarodnoj letnjoj školi mehanike loma kao slušalac (5 puta), da bi na 4 poslednje učestvovao kao predavač. Mehaniku loma zavarenih spojeva je specijalizirao u Institutu za zavarivanje, Kembriđ (1977), i Imperial koledžu, London (1986).



Vencislav Grabulov was born in Titov Veles (SFRY) on May 5, 1953. In 1976, he graduated from the Faculty of Technology and Metallurgy (TMF), University of Belgrade, majoring in metallurgy. He mastered at TMF in 1986, and defended doctoral dissertation “Determination of resistance curve parameters applying potentiometric method for crack growth measurement”, in 1995 at TMF.

As author or co-author he published more than 150 scientific and professional papers. He speaks English and practices Russian.

Career

Dr Vencislav Grabulov was employed at the Military Technical Institute (VTI) in Belgrade from 1976 to April 1, 2008, when he is appointed as general manager of the Institute for Testing Materials (IMS). He was head of Metallurgical Research Section (1986–2000), and head of Department for Metallic Materials (2000–2008), of the VTI.

Scientific research and professional activities

At VTI, scientific research of Dr Vencislav Grabulov was aimed at developing high strength metallic materials, principally steels, their characterization, from aspects of weldability and crack resistance in particular. Apart from designing metals and alloys, development included manufacturing technology, processing and forming, especially welding technology and metallurgy, and integrity assurance of metallic structures in fields of mechanical and civil engineering.

Since 1991, he is leader of research in metallic materials at VTI, that are performed in several phases with many topics, at an average of 15 annually. On some topics he is directly committed, as in new manufacturing technologies and processing of high strength steel, weldability assessment and welding procedure technologies for high and ultra high strength steels (for rocket motor chambers, armoured vehicle steel, martensitic aged steels), and high strength aluminium alloys (above 550 MPa).

He elaborated and introduced into practice many technology tests for weldability assessment and susceptibility to weld cracking, methods of fracture mechanics, at impact loading in particular, and procedures for metallic materials characterization.

He has developed an original procedure for determining dynamic resistance curve from single specimen tests and by applying the potential drop technique for crack growth monitoring.

Professionally, Dr Grabulov is involved in the technology and quality inspection, technical conditions of processing, inspection and acceptance of metallic parts and assemblies, primarily in welding (armoured bodies of military vehicles, rocket motor chambers, bridges, vessels). Thereby, the technology transfer to manufacturer is of importance along with techno-economic analyses of development and processing metallic military components, aided by domestic knowledge and facilities.

As fellow of TMF and Faculty of Mechanical Engineering (MF), University of Belgrade, he took part in completing multiple projects of the Serbian Ministry of Science and foreign projects as well.

He is member of VTI Scientific Council and of editorial board member of the journal “Naučnotehnički pregled”.

Lecturing and education activities

Professional and scientific experience of Dr Vencislav Grabulov includes International Fracture Mechanics Summer School activities (5 times attendee, and 4 times invited lecturer). He specialized fracture mechanics of welded joints at the Welding Technology Institute, Cambridge (1977), and at Imperial College, London (1986).

Predmete *Ponašanje materijala pri zavarivanju, Metalurgija zavarivanja, Ispitivanje materijala i zavarenih konstrukcija*, po programu Međunarodnog instituta za zavarivanje (IIW) predaje na kursovima za inženjere zavarivanja na Mašinskim fakultetima u Beogradu, Nišu i Podgorici, u Zavodu za zavarivanje i Institutu Goša u Beogradu.

Na redovnim i posleddiplomskim studijama na TMF i MF u Beogradu predaje predmete *Zavarivanje, Metalurgija zavarivanja, Ispitivanje metala i Mehanička loma*. Doprineo je definisanju i izvođenju programa posleddiplomskih studija za studente iz Libije na TMF i VTI, predmeti *Ispitivanje materijala, Kontrola kvaliteta, Proizvodnja zavarivanjem, Mehanička loma* (za koje je pripremio skripta), *Čelici–podela, osobine i izbor i Termička obrada metala*.

Učestvovao je u izradi više magistarskih teza i doktorskih disertacija, tematski vezanih za projekte na kojima je angažovan, i bio je član komisija za odbranu.

Aktivnosti u stručnim organizacijama

Vencislav Grabulov je dugogodišnji član Društva za unapređivanje zavarivanja u Srbiji (DUZS), a od 1998. je i predsednik DUZS i Upravnog odbora časopisa „Zavarivanje i zavarene konstrukcije“, glasila DUZS. Pokretač je aktivnosti DUZS (međunarodne konferencije Zavarivanje 1999, 2001, 2003, 2006, sajam zavarivanja, seminara, škole zavarivanja). U tome, DUZS ima podršku Ministarstva za nauku Vlade Srbije i privrede (Naftna industrija Srbije, Elektroprivreda, privredne komore, metalna, hemijska i građevinska industrija, posebno firmi u zavarivačkoj proizvodnji). To omogućava učešće delegata DUZS u radu IIW, naročito na Godišnjim skupštinama. Delegat je DUZS u dve radne grupe i jednoj tehničkoj komisiji IIW i tehničkom komitetu Evropske federacije za zavarivanje (EWF).

Ističe se i u aktivnostima Društva za integritet i vek konstrukcija (DIVK), gde je predsednik Nadzornog odbora.

Član je Udruženja metalurških inženjera Srbije i Srpskog hemijskog društva.

Međunarodna saradnja

Brojne su inostrane institucije sa kojima dr Grabulov ima saradnju u naučnoistraživačkom radu. Najvažnije su Imperial Koledž (London), Tehnički univerzitet Miškole (Mađarska), Australijski institut za tehnologiju zavarivanja, Institut za ispitivanje materijala i zavarivanje, Temišvar (Rumunija). Njegovi lični kontakti su aktivni sa gotovo svim značajnim institucijama republika nastalih od bivše Jugoslavije.

Aktivnosti od posebnog značaja

Kao predsednik DUZS je upornošću, a uz podršku Ministarstva za nauku i privrede, uspeo da oformi Nacionalno telo za autorizaciju (ANB) u Srbiji, ovlašćeno od EWF za obuku osoblja u zavarivanju svih nivoa sa međunarodno priznatom diplomom, što je omogućilo našoj privredi da bude konkurentna i nezavisna u obrazovanju kadrova. Izvršni je rukovodilac ANB za Srbiju – DUZS CertPers.

Based on the programme of International Institute of Welding (IIW), he teaches lectures in *Material Behaviour in Welding, Welding Metallurgy, Testing materials and Welded Structures*, on specialized courses for welding engineers at Faculties of Mechanical Engineering in Belgrade, Niš, and Podgorica, and at the Welding Institute and the Institute Goša in Belgrade.

He teaches *Welding, Welding Metallurgy, Testing Metals, and Fracture Mechanics* on undergraduate and graduate level studies at TMF and MF in Belgrade. He contributed to defining and realising graduate level programme for Libyan students at TMF and VTI, and courses *Materials Testing, Quality Inspection, Welding Manufacture, Fracture Mechanics* (authorised notebooks), *Steels–division, properties and selection, and Heat Treatment of Metals*.

He is acknowledged for taking part in the completion of many experiments of masters theses and doctoral dissertations, concerning projects topics, where he is engaged, or as member of defence committees.

Activities in professional organisations

Vencislav Grabulov is long-term member of Serbian Welding Society (DUZS), and from 1998 he is DUZS president and head of DUZS journal “Welding and Welded Structures” Governing Board. He has initiated DUZS activities (International Conferences *Welding* 1999, 2001, 2003, 2006, welding fair, seminars, welding schools). Concerning these entrepreneurs, DUZS is supported by Serbian Ministry of Science and industry (Serbian Oil Industry, Electric Power Industry, economic chamber, metal-, chemical-, and civil engineering, particularly companies of welding and manufacture). This has enabled the participation of DUZS delegates at IIW, at Annual Conferences in particular. DUZS is representative in two working groups and in one technical committee of the European Welding Federation (EWF).

He is prominent in activities of the Society for Structural Integrity and Life (DIVK), where he is head of Supervising Board.

He is member of the Society of Metallurgical Engineers of Serbia and member of the Serbian Chemical Society.

International cooperation

Dr Grabulov has had scientific research cooperation with numerous international institutions. Most important are Imperial College (London), Technical University Miskolc (Hungary), Welding Technology Institute of Australia, Institute of Material Testing and Welding, Timisoara (Romania). He maintains active personal contacts with all important institutions in republics of former Yugoslavia.

Activities of special importance

With support from Serbian Ministry of Science and industry, as DUZS president with pertinent actions, he has succeeded in establishing the Authorized National Body (ANB) in Serbia, authorized by EWF for training all-level welding personnel with internationally recognized diploma, thus making our industry competitive and independent in educating personnel. He is chief executive officer of ANB for Serbia – DUZS CertPers.

Vesti iz DIVK



News from DIVK

SEDMA GODIŠNJA SKUPŠTINA DIVK

Sedma redovna godišnja skupština Društva za integritet i vek konstrukcija (DIVK) održana je 22. februar 2008. u Institutu za ispitivanje materijala (IMS) u prisustvu 48 članova.

Izveštaj o radu DIVK u proteklih 12 meseci u ime Upravnog odbora podneo je predsednik prof. dr Aleksandar Sedmak. Protekla godina je ocenjena kao uspešna za DIVK, zbog proširene saradnje sa privredom i povećanog interesovanja za učlanjenje. Kao poseban doprinos navedeni su seminari „Integritet konstrukcija ugroženih korozijom“, održani za donatore, JKP „Beogradske

DIVK SEVENTH ANNUAL ASSEMBLY

The seventh annual assembly of the Society for structural integrity and life (DIVK) was held on February 22, 2008 at the Institute for Testing Materials (IMS), with 48 members present.

President Prof. Dr Aleksandar Sedmak reported, on behalf of the Governing Board, on DIVK activities in the past 12 months. Last year was evaluated as successful for DIVK, having extended cooperation with industry and increased interest for membership. As a special contribution, seminars “Integrity of Structures Endangered by Corrosion”, were held for donors: JKP “Beogradske

elektrane“ i TE „Nikola Tesla“, Obrenovac. Četvrta konferencija DIVK je održana u novembru 2007. zajedno sa seminarom „Integritet i vek mostova“.

Predsednik Nadzornog odbora, dr Vencislav Grabulov, je u izveštaju ukazao na dobar rad DIVK i na balansiran odnos prihoda i rashoda DIVK u 2007.

Izveštaj o radu časopisa „Integritet i vek konstrukcija“ je podneo glavni i odgovorni urednik docent dr Zoran Radaković. Časopis je u tri broja objavio ukupno 25 članaka. Brojevi 1 i 3 su sadržali po pet članaka objavljenih na srpskom i engleskom, a na srpskom u broju 2 je štampano 15 predavanja seminara „Integritet konstrukcija ugroženih korozijom“. Časopis priprema prijavu za impakt listu citiranih časopisa. Promovisan je broj 3/2007. časopisa „Integritet i vek konstrukcija“.

Planirano je da aktivnost DIVK u 2008. bude 10. Međunarodna letnja škola mehanike loma (IFMASS 10) „Osnove mehanike loma i postupci za ocenu integriteta konstrukcija“ i saradnja na organizaciji seminara „Sigurnost i pouzdanost oštećenih konstrukcija i materijala sa greškama“.

U okviru skupštine je gosp. Ernst Bode, generalni direktor firme Messer Tehnogas održao predavanje „Kompozitne posude za ultravisoke pritiske“.

elektrane” and TE “Nikola Tesla”, Obrenovac. The fourth DIVK Conference was held in November 2007 along with the seminar “Integrity and life of bridges”.

President of Supervisory Board, Dr Vencislav Grabulov, in his report, informed the Assembly about good DIVK activity and balanced ratio of DIVK incomes and expenditures in year 2007.

Editor-in-chief docent Dr Zoran Radaković submitted the report on the journal “Structural integrity and life“. In the three annual issues 15 articles were published. Issues 1 and 3 contain five articles each, published both in Serbian and English, and issue 2 presented 15 lectures from the seminar “Integrity of Structures Endangered by Corrosion“. The journal editorial board are preparing to apply for SCI list assessment of referred journals. The issue 3/2007 of the journal „Structural Integrity and Life“ was promoted.

Major DIVK activities in 2008 are planned to be the Tenth International Fracture Mechanics Summer School (IFMASS 10), “Fundamentals of Fracture Mechanics and Structural Integrity Assessment Methods”, and cooperation in organising the seminar “Security and Reliability of Damaged Structures and Defective Materials”.

In the scope of the Assembly, Mr Ernst Bode, General Manager of Messer Tehnogas, presented a lecture “Composite Pressure Vessels for Ultra High Pressure”.

DIVK DONATORI – DIVK DONORS

Institut za ispitivanje materijala IMS, Beograd
GOŠA FOM, Smederevska Palanka
TE „Nikola Tesla“, Obrenovac
NIS NAFTAGAS Zrenjanin
NIS Rafinerija nafte, Pančevo

JKP „Beogradske elektrane“
GOŠA Institut d.o.o.
Certlab, Pančevo
HIP Petrohemija, Pančevo
CertLab, Pančevo

Ikarbus AD
EPS Direkcija za razvoj i investicije, Beograd
KONMAT, Beograd
PMC Inženjering, Beograd
Zavod za zavarivanje, Beograd

Spisak članova ESIS ESIS members list

Prezime i ime Last and first name	Prezime i ime Last and first name	Prezime i ime Last and first name
1 Aleksić Boško	23 Kirić Miodrag	45 Rakić Pavle
2 Aleksić Radoslav	24 Kojović Aleksandar	46 Rakin Marko
3 Anđelić Biljana	25 Kurai Jano	47 Sarić Vasilije
4 Arsić Miodrag	26 Kutin Marina	48 Sedmak Aleksandar
5 Atanasovska Ivana	27 Maksimović Stevan	49 Sedmak Stojan
6 Bakić Gordana	28 Mandić Gordan	50 Stašević Milenko
7 Bređan Aleksandar	29 Maneski Taško	51 Stevanović Jovica
8 Burzić Meri	30 Manjgo Mersida	52 Svetel Igor
9 Burzić Zijah	31 Milović Ljubica	53 Šarkočević Živče
10 Čanji Erne	32 Milutinović Zlatan	54 Šijački-Žeravčić Vera
11 Četković Marina	33 Mišković Dragan	55 Štrbački Svetlana
12 Cvetković Dragoljub	34 Mladenović Mladen	56 Štrbački Živko
13 Cvijović Zorica	35 Momčilović Dejan	57 Šumarac Dragoslav
14 Đekić Slobodan	36 Nanut Ana	58 Tarlać Zoran
15 Đukić Miloš	37 Odanović Zoran	59 Trišović Nataša
16 Filipović Nadežda	38 Ognjanović Milosav	60 Uskoković Petar
17 Grabulov Vencislav	39 Pavišić Miodrag	61 Vasić Radomir
18 Grubač Slobodan	40 Prokić-Cvetković Radica	62 Vidojković Sonja
19 Ivanović Veljko	41 Radaković Zoran	63 Živković Aleksandar
20 Jaković Dragan	42 Radojević Vesna	64 Živković Irena
21 Jakovljević Aleksandar	43 Radović Nenad	65 Zrilić Milorad
22 Janjić Bojan	44 Rajičić Bratislav	

DIVK ČLANOVI – DIVK MEMBERS

Prezime i ime Last and first name	Prezime i ime Last and first name	Prezime i ime Last and first name
1 Adžiev Gorgi	55 Jarić Jovo	109 Popović Olivera
2 Adžiev Todor	56 Jegdić Bore	110 Popovski Slobodan
3 Aleksić Boško	57 Jonaš Zoltan	111 Prokić-Cvetković Radica
4 Aleksić Radoslav	58 Jovanović Darko	112 Radaković Zoran
5 Aleksić Vujadin	59 Jovanović Dragomir	113 Radojević Vesna
6 Anđelić Biljana	60 Jovičić Radomir	114 Radosavljević Aleksandra
7 Anđelković Zoran	61 Karišić Dragan	115 Radosavljević Ljubinka
8 Arsić Miodrag	62 Kidžin Dejan	116 Radović Nenad
9 Assoul Yasmina	63 Kirić Miodrag	117 Rajičić Bratislav
10 Atanasovska Ivana	64 Kojić Đorđe	118 Rakić Pavle
11 Bađura Vlastislav	65 Kojić Miloš	119 Rakin Marko
12 Bakić Gordana	66 Kojović Aleksandar	120 Ribić Zoran
13 Behmen Mehmed	67 Kordić Nina	121 Romhanji Endre
14 Blačić Ivo	68 Kostić Miloš	122 Rosić Božidar
15 Bobić Ilija	69 Kovačević Branislav	123 Sabo Bela
16 Bređan Aleksandar	70 Kovačević Tomislav	124 Sarić Vasilije
17 Burzić Meri	71 Kovačević Zorica	125 Sedmak Aleksandar
18 Burzić Zijah	72 Kurai Jano	126 Sedmak Stojan
19 Čamagić Ivica	73 Kutin Marina	127 Simović Željko
20 Čanji Erne	74 Kuzmanović Dragoslav	128 Smiljanić Marija
21 Četković Marina	75 Lozanović Jasmina	129 Sretenović Bojan
22 Čubrilović Slobodan	76 Ljiljak Milena	130 Sretenović Bratislav
23 Cvetković Dragoljub	77 Maksimović Stevan	131 Stamenić Zoran
24 Cvetković Dragomir	78 Mandić Gordan	132 Stašević Milenko
25 Cvetkovski Sveto	79 Maneski Taško	133 Stevanović Jovica
26 Cvijović Zorica	80 Manjgo Mersida	134 Stojanović Dragan
27 Dangubić Miloš	81 Manojlović Miloš	135 Stojanović Miodrag
28 Dejanović Biserka	82 Marinac Sava	136 Stojanović Nebojša
29 Dević Snežana	83 Marković Zoran	137 Struharik Stanislav
30 Dobrojević Miloš	84 Mićunović Milan	138 Svetel Igor
31 Drča Siniša	85 Mijuca Dubravka	139 Šarkočević Živče
32 Đekić Slobodan	86 Miladinović Zoran	140 Šijački-Žeravčić Vera
33 Đukić Miloš	87 Milčić Dragan	141 Štrbački Svetlana
34 Đurđević Goran	88 Milovanović Andreja	142 Štrbački Živko
35 Đurić Velibor	89 Milović Ljubica	143 Šumarac Dragoslav
36 Fertilio Antun	90 Milutinović Zlatan	144 Tarlać Zoran
37 Filipović Nadežda	91 Miralem Samir	145 Tošić Tihoslav
38 Gačo Dženana	92 Mišković Dragan	146 Trajković Marina
39 Garić Nikola	93 Mladenović Mladen	147 Trišović Nataša
40 Gerić Katarina	94 Momčilović Dejan	148 Ugrčić Marinko
41 Gočev Jovan	95 Nanut Ana	149 Uskoković Petar
42 Grabulov Vencislav	96 Nedeljковиć Ivan	150 Vasić Radomir
43 Grubač Slobodan	97 Nektarijević Radoslav	151 Velicki Aleksandar
44 Grujić Biljana	98 Nešković Slobodan	152 Veljković Saša
45 Gubeljak Nenad	99 Nijemčević Srećko	153 Veljović Aleksandar
46 Islamović Fadil	100 Nikolić Ružica	154 Vidojković Sonja
47 Ivanović Veljko	101 Obradović Novica	155 Vratnica Maja
48 Jagodanović Andrej	102 Odanović Zoran	156 Vukelić Mihailo
49 Jaković Dragan	103 Ognjanović Milosav	157 Vukojević Nedeljko
50 Jakovljević Aleksandar	104 Pajtaš Jan	158 Živković Aleksandar
51 Janjatović Aleksandar	105 Pavišić Miodrag	159 Živković Irena
52 Janjić Bojan	106 Perović Zoran	160 Živković Miroslav
53 Janković Ksenija	107 Petrašković Zoran	161 Živojinović Branko
54 Janković-Miladinović Svetlana	108 Petrović Ljubomir	162 Zrilić Milorad



DESETA MEĐUNARODNA LETNJA ŠKOLA MEHANIKE LOMA (IFMASS 10)

„Osnove mehanike loma i postupci za ocenu integriteta konstrukcija“

<http://ifmass10.inovacionicentar.com>

Istorijat

Osnovana 1980. od strane profesora M. Vnuka i S. Sedmaka, Međunarodna letnja škola mehanike loma (IFMASS) je organizovana 9 puta: prvih šest u različitim mestima bivše Jugoslavije, IFMASS 7 i IFMASS 8 u SR Jugoslaviji i IFMASS 9 u Varni, Bugarska, 2005. Naslovi IFMASS su bili:

1. Uvod u mehaniku loma i konstruisanje sa sigurnošću od loma
2. Savremeni aspekti projektovanja i izrade sudova i cevovoda pod pritiskom
3. Mehanika loma zavarenih spojeva
4. Perspektive razvoja i primene mehanike loma
5. Procena veka energetskih postrojenja uz primenu mehanike loma
6. Eksploatacijske prsline u posudama pod pritiskom i rezervoarima
7. Eksperimentalne i numeričke metode mehanike loma u oceni integriteta konstrukcija
8. Od mehanike loma do ocene integriteta konstrukcija
9. Izazovi materijala i zavarenih spojeva – ocena integriteta i veka

Tematske monografije 1. do 7. su izdate na srpskom pod naslovima škola, monografija 5. je izdata i na engleskom. Monografija IFMASS 8 je izdata na engleskom i dostupna je na veb strani DIVK (Društvo za integritet i vek konstrukcija) www.divk.org.yu. Monografija IFMASS 9 je u pripremi na engleskom i očekuje se pred početak IFMASS 10.

Sem predavača iz Jugoslavije, učešće u kolegijumu predavača su prihvatili svetski priznati eksperti iz SAD, Nemačke, Velike Britanije, Francuske, Poljske, Rusije, Ukrajine, Mađarske, Rumunije, Bugarske, Slovačke. Neki od njih su učestvovali više puta sa serijom predavanja, npr. Stojan Sedmak, Aleksandar Radović, Mladen Berković, Jovo Jarić, kao i Majkl Vnuk, Mohan Ratwani, Dejvid Rid, Hari Mak Henri (SAD), Džon Rejdon (UK), Adam Mazur (Poljska), Gij Plivinaž (Francuska) i Bernd Mihel, Petar Agatonović (Nemačka). Treba navesti i čuvena imena kao Majkl Bardekin, Pedro Marcel, Dominik Francoa, Vera Ivanova, Džon Landes, Karl Hajnc Švalbe, Valerij Troščenko, Ivan Hrivnak, Laslo Tot. Ponosni smo i na predgovor Džordža Irvina u monografiji 3.

Broj učesnika je bio 62 na IFMASS 1, a zatim redom 79; 84; 96; 145; 125; 137; 107; i 51 na IFMASS 9.

Obrazovanje je prvi pristup IFMASS. Koliko je ono uspešno govori broj od 9 predavača na IFMASS 9, i 16 pozvanih predavača za IFMASS 10, koji su se počeli kao slušaoci.

Drugi aspekt je razvoj i primena mehanike loma i ocene integriteta konstrukcija. Rezultati primene su izuzetno dobri.

Organizacija IFMASS 10

Osnovni razlozi za organizovanje Desete međunarodne letnje škole mehanike loma (IFMASS 10) su:

- da se nastavi sa obrazovanjem specijalista u postupcima ocene integriteta konstrukcija radi proširenja njihove primene;
- da se prikažu novi pristupi u kontinualnom praćenju konstrukcija i razvoju programa za nova područja primene računara;
- da se ustpostavi forum za razmenu rezultata istraživanja problema vezanih sa oštećenjima konstrukcija i sigurnom eksploatacijom. To će biti ostvareno na dva okrugla stola:

Primena softvera u oceni integriteta konstrukcija

Iskustva u oceni integriteta i veka konstrukcija

TENTH INTERNATIONAL FRACTURE MECHANICS SUMMER SCHOOL (IFMASS 10)

“Fundamentals of Fracture Mechanics and Structural Integrity Assessment Methods”

<http://ifmass10.inovacionicentar.com>

Historical background

Established in 1980 by Profs. M. Wnuk and S. Sedmak, the International Fracture Mechanics Summer Schools (IFMASS) had been organised nine times: the first six in different places of former Yugoslavia, IFMASS 7 and IFMASS 8 in FR Yugoslavia and IFMASS 9 in Varna, Bulgaria in 2005. The titles of IFMASS are:

1. Introduction to Fracture Mechanics and Fracture-Safe Design
2. Modern Aspects of Pressure Vessels and Penstocks Design and Manufacturing
3. Fracture Mechanics of Weldments
4. Prospective of Fracture Mechanics Development and Use
5. The Application of Fracture Mechanics to Life Estimation of Power Plant Components
6. Service Cracks in Pressure Vessels and Storage Tanks
7. Fracture Mechanics Experimental and Numerical Methods in Structural Integrity Assessment
8. From Fracture Mechanics to Structural Integrity Assessment
9. The Challenge of Materials and Weldments – Structural Integrity and Life Assessments

Topical monographs 1 to 7 were published in Serbian under the School titles, the monograph 5 was published also in English. The IFMASS 8 monograph was published in English and is still available on DIVK (Society for Structural Integrity and Life) website www.divk.org.yu. The IFMASS 9 monograph will be published in English and is expected before IFMASS 10.

In addition to the lecturers from Yugoslavia, as lecturers were invited world recognised experts from USA, Germany, Great Britain, France, Poland, Russia, Ukraine, Hungary, Romania, Bulgaria, Slovakia. Some of them took part several times, having a series of lectures, as Stojan Sedmak, Aleksandar Radović, Mladen Berković, Jovo Jarić, and Michael Wnuk, Mohan Ratwani, David Read, Harry Mac Henry (USA), John Radon (UK), Adam Mazur (Poland), Guy Pluvinage (France), and Bernd Michel, Petar Agatonović (Germany). Some famous names should also be noted, as Michael Burdekin, Pedro Marcel, Dominique Francoise, Vera Ivanova, John Landes, Karl Heinz Schwalbe, Valerij Troščenko, Ivan Hrivnak, Laszlo Toth. We are very proud on the preface of George Irwin in monograph 3.

There was 62 participants in the first School, and successively 79; 84; 96; 145, 137, 107, and 51 at IFMASS 9.

Education is the first aspect of IFMASS. How successful it was shows the number of 9 lecturers at IFMASS 9, and 16 invited lecturers for IFMASS 10, starting as participants.

The second aspect is the development and use of fracture mechanics and structural integrity assessment. Results are very good.

Organization of IFMASS 10

Some basic reasons to organise the Tenth International Fracture Mechanics Summer School (IFMASS 10) are:

- to continue the education of specialists in structural integrity assessment methods for their better application;
- to present new approaches in continuous monitoring of structures and develop software for new areas in computer use;
- to establish a forum for the exchange of results of researched problems connected with structural damage and safe service. This will be achieved through two round tables:

The application of software in structural integrity assessment

The experience in structural integrity and life assessment

Program IFMASS 10 – „Osnove mehanike loma i postupci za ocenu integriteta konstrukcija“

Br.	Termin	Predavač	Naslov predavanja
Ponedjeljak, 23. jun 2008: Osnove mehanike loma			
	9:00	Otvaranje	
1.	9:15–10:00	Aleksandar Sedmak	Otkazi konstrukcija u eksploataciji
2.	10:00–10:45	Majkl Vnuk (SAD)	Osnovne jednačine linearno elastične mehanike loma
	10:45–11:00	Kafe pauza	
3.	11:00–11:45	Petar Agatonović (Nemačka)	Mehanika loma u oblasti plastičnih deformacija
4.	11:45–12:25	Marko Rakin	Mikromehanički konstitutivni izrazi u mehanici žilavog loma
5.	12:25–13:05	Katarina Gerić	Mikrostrukturalna analiza područja vrha prslina
6.	13:05–13:45	Zijah Burzić	Analiza zamora primenom mehanike loma
	14:00	Ručak	
Utorak, 24. jun 2008: Ocena integriteta i veka konstrukcija: teorija i praksa			
7.	8:45–9:20	Milorad Zrilić	Eksperimentalno određivanje parametara mehanike loma
8.	9:20–10:00	Dražan Kozak, Hrvatska	Teorijske osnove ocene integriteta i veka konstrukcija
9.	10:00–10:40	Vencislav Grabulov	Značaj mehanike loma u oceni integriteta zavarenih konstrukcija
10.	10:40–11:20	Vera Šijački	Prsline indukovane naponima i radnom sredinom kod toplotno postojanih čelika
	11:20–11:40	Kafe pauza	
11.	11:40–12:10	Ljubica Milović	Prsline u zoni uticaja toplote čelika za povišene temperature
12.	12:10–12:40	Meri Burzić	Značaj mehanike loma u oceni integriteta procesne opreme
13.	12:40–13:20	Miodrag Arsić	Praktični aspekti integriteta posuda pod pritiskom
14.	13:20–14:00	Dragoslav Šumarac	Ocena integriteta građevinskih konstrukcija
	14:00	Ručak	
Sreda, 25. jun 2008: Numerički pristup analizi integriteta konstrukcija			
15.	9:00–9:40	Taško Maneski	Analiza naponskog stanja konstrukcija u eksploataciji
16.	9:40–10:20	Stevan Maksimović	Metode procene veka konstrukcija sa inicijalnim oštećenjima za opšti spektar opterećenja
17.	10:20–10:50	Nataša Trišović	Modifikacija dinamičkih karakteristika u reanalizi mehaničkih sistema
18.	10:50–11:20	Jasmina S. Asul (Alžir)	Probabilistički model rasta prsline pod jednovremenim dejstvom pitinga i zamora
	11:20–11:40	Kafe pauza	
	11:40–13:30	<i>Okrugli sto</i>	Primena softvera u oceni integriteta konstrukcija
	14:00	Ručak	
Četvrtak, 26. jun 2008: Dalji razvoj i obezbeđenje sigurne eksploatacije konstrukcija			
19.	9:00–9:45	Stevan Kuzmanović	Poređenje postupaka ispitivanja bez razaranja u oceni integriteta konstrukcija
20.	9:45–10:30	Miodrag Kirić	Savremene metode ispitivanja bez razaranja
21.	10:30–11:15	Nenad Gubeljak (Slovenija)	Kontinuirano praćenje ponašanja konstrukcija i procena integriteta
	11:15–11:30	Kafe pauza	
22.	11:30–12:15	Petar Agatonović (Nemačka)	Uprošćenja za konzervativnu ocenu integriteta konstrukcija
23.	12:15–13:00	Nenad Radović	Uticaj uključaka u metalnim materijalima
	13:00	Ručak	
Petak, 27. jun 2008.			
24.	9:00–9:45	Majkl Vnuk (SAD)	Analiza prslina na mezo nivou
25.	9:45–10:30	Stojan Sedmak	Analiza prslina na nano nivou
	10:30–12:00	<i>Okrugli sto</i>	Iskustva u oceni integriteta i veka konstrukcija
	12:15	Ručak	

Programme IFMASS 10 – “Fundamentals of fracture mechanics and structural integrity assessment methods”

Br.	Time	Lecturer	Title of lecture
Monday, June 23, 2008: An outline of fracture mechanics			
	9:00	Opening	
1.	9:15–10:00	Aleksandar Sedmak	Failures of structures in service
2.	10:00–10:45	Michael Wnuk (USA)	Basic equations of linear-elastic fracture mechanics
	10:45–11:00	Coffee break	
3.	11:00–11:45	Petar Agatonović (Germany)	Fracture mechanics in the plastic range
4.	11:45–12:25	Marko Rakin	Micromechanical constitutive expressions in elastic-plastic fracture mechanics
5.	12:25–13:05	Katarina Gerić	Microstructural analysis of crack tip region
6.	13:05–13:45	Zijah Burzić	Fatigue analysis using fracture mechanics
	14:00	Lunch break	
Tuesday, June 24, 2008: Structural integrity and life assessment: theory and practice			
7.	8:45–9:20	Milorad Zrilić	Experimental determination of fracture mechanics parameters
8.	9:20–10:00	Dražan Kozak, Croatia	Theoretical basis of structural integrity and life
9.	10:00–10:40	Vencislav Grabulov	Significance of fracture mechanics in welded structure integrity assessment
10.	10:40–11:20	Vera Šijački	Cracks induced in heat resistant steels by stresses and environment
	11:20–11:40	Coffee break	
11.	11:40–12:10	Ljubica Milović	Cracks in HAZ of steels for elevated temperature application
12.	12:10–12:40	Meri Burzić	Significance of fracture mechanics in process equipment integrity assessment
13.	12:40–13:20	Miodrag Arsić	Service aspects of pressure vessels integrity
14.	13:20–14:00	Dragoslav Šumarac	Integrity assessment in civil engineering
	14:00	Lunch break	
Wednesday, June 25, 2008: Numerical approach to structural integrity analysis			
15.	9:00–9:40	Taško Maneski	Stress analysis of structures in service
16.	9:40–10:20	Stevan Maksimović	Life assessment methods of initial damaged structures under general loading spectrum
17.	10:20–10:50	Nataša Trišović	Dynamic characteristics modification in the mechanical structures reanalysis
18.	10:50–11:20	Yasmina S. Assoul (Algeria)	Probabilistic model of crack growth under simultaneous effect of pitting and fatigue
	11:20–11:40	Coffee break	
	11:40–13:30	<i>Round table discussion</i>	<i>The application of software in structural integrity assessment</i>
	14:00	Lunch break	
Thursday, June 26, 2008: Further development in safe service assurance of structures			
19.	9:00–9:45	Števan Kuzmanović	Comparison of non-destructive testing procedures in structural integrity assessment
20.	9:45–10:30	Miodrag Kirić	Modern methods for non-destructive testing
21.	10:30–11:15	Nenad Gubelj (Slovenia)	Continuous monitoring of structures behaviour by holographic testing
	11:15–11:30	Coffee break	
22.	11:30–12:15	Petar Agatonović (Germany)	Simplifications for conservative assessment of structural integrity
23.	12:15–13:00	Nenad Radović	Effect of inclusions in metallic materials
	13:00	Lunch break	
Friday, June 27, 2008			
24.	9:00–9:45	Michael Wnuk (USA)	Crack analysis at mezzo level
25.	9:45–10:30	Stojan Sedmak	Crack analysis at nano level
	10:30–12:00	<i>Round table discussion</i>	<i>The experience in structural integrity and life assessment</i>
	12:15	Lunch break	

DOKTORATI – DOCTORAL DEFENCES

Odbranjena doktorska disertacija iz oblasti integriteta i veka konstrukcija
Doctoral thesis defended in the field of structural integrity and life**Nataša R. Trišović, MODIFIKACIJA DINAMIČKIH KARAKTERISTIKA U STRUKTURALNOJ REANALIZI MEHANIČKIH SISTEMA**
*(Modification of the Dynamics Characteristics in the Structural Dynamic Reanalysis)*Mašinski fakultet Univerziteta u Beogradu, datum: 6.11.2007.
Komisija: red. prof. dr Taško Maneski (mentor), red. prof. dr Zoran Golubović, red. prof. dr Nikola Mladenović, red. prof. dr Milorad Milovančević, red. prof. dr Dragoslav Šumarac, Građevinski fakultet Univerziteta u Beogradu.

Naučna oblast: mašinstvo

Uža naučna oblast: primenjena mehanika

Apstrakt

U ovom radu je razvijena procedura za popravljjanje dinamičkog ponašanja mašinskih konstrukcija u eksploataciji. U osnovi procedure je distribucija kinetičke i potencijalne energije na glavnim oblicima oscilovanja konstrukcije. Inače, tehnika strukturne dinamičke modifikacije može se definisati kao skup metoda kojima se dinamičko ponašanje konstrukcije može popraviti procenom modifikovanog ponašanja, dobijenog dodavanjem modifikacija kao na primer: koncentrisanih masa, krutih veza, prigušenja, novih elemenata i sl., ili promenom konfiguracionih parametara u samoj strukturi. Takve metode kod kojih je osnov metod konačnih elemenata se često se nazivaju metode reanalize. Potreba za strukturnom dinamičkom modifikacijom se pojavila zbog zahteva za višim performansama složenih mašina i strukturnih sistema, kao što su mašine alatke, automobili, šinska vozila, avioni, pogonski sistemi procesne, energetske i redarske opreme i sistemi sa velikim brojem obrtaja. Oni zahtevaju dinamičko projektovanje, odnosno, željene dinamičke karakteristike kao što su nivo vibracija, odziva, rezonance, sopstvenih vrednosti, dinamičke stabilnost i modalnih oblika.

Ključne reči: modifikacija, reanaliza, metoda konačnih elemenata, sopstvene vrednosti, parametri konstrukcije**Dženana Gačo, ISTRAŽIVANJE UTICAJA PROMENLJIVOG OPTEREĆENJA I TEMPERATURE NA PONAŠANJE ZAVARENOG SPOJA VISOKOLEGI-RANOG ČELIKA***(Research on the effects of variable load and temperature on the behaviour of welded joint of high-alloyed steel)*Mašinski fakultet Univerziteta u Beogradu, datum: 23.11.2007.
Komisija: vanr. prof. dr Radica Prokić-Cvetković (mentor), dr Zijah Burzić, naučni savetnik VTI–Beograd (komentor), red. prof. dr Aleksandar Sedmak.

Naučna oblast: mašinstvo

Uža naučna oblast: integritet i vek konstrukcija, mehanika loma, nauka o materijalima

Apstrakt

Pojedine komponente procesne i termoenergetske opreme u koje spadaju i parovodi, a koje rade u uslovima povišenih temperatura i pritisaka predstavljaju kritična mesta zbog specifičnih radnih parametara. Svaki eventualni otkaz na ovim komponentama predstavljao bi opasnost ne samo po rad postrojenja već i po sredinu koja ih okružuje. Problem se dodatno usložnjava prisustvom zavarenih komponenti, kod kojih ne sme da se isključi mogućnost postojanja grešaka tipa prslina.

Za eksploatacijsku sigurnost konstrukcija procesne opreme u termoenergetskim postrojenjima, najvažnije su karakteristike koje opisuju pojavu i rast prslina pod uticajem promenljivog opterećenja. U slučaju postojanja oštećenja potrebno je precizno proceniti integritet komponente i doneti odluku o njenoj daljoj eksploataciji.

Istraživanja ove doktorske disertacije su obuhvatila uticaj eksploatacionih uslova (vreme eksploatacije i temperature) na ponašanje osnovnog materijala i zavarenog spoja visokolegiranog čelika za rad na povišenim temperaturama pri dejstvu promenljivog opterećenja. Ovo istraživanje se odnosilo na visokolegirani čelik

Faculty of Mechanical Engineering, University of Belgrade, date: November 6, 2007.

Committee: Dr Taško Maneski–full professor (mentor), Dr Zoran Golubović, full professor, Dr Nikola Mladenović–full professor, Dr Milorad Milovančević, full professor, Dr Dragoslav Šumarac, full professor, Faculty of Civil Engineering, University of Belgrade.

Science topic: mechanical engineering

Special topics: applied mechanics

Abstract

Structural dynamic modification (SDM) techniques can be defined as the methods by which dynamic behaviour of a structure is improved by predicting the modified behaviour brought about by adding modifications like those of lumped masses, rigid links, dampers, beams etc., or by variations in the configuration parameters of the structure itself. Such methods, especially those with their roots in finite element models, have often been described as reanalysis. Most of the techniques imply a dynamic test at some stage of SDM and currently prefer implementation on a personal computer. The need for SDM arises because of the demands on higher performance capabilities of complex mechanical and structural systems, like machine tools, automobiles, rail vehicles, aerospace systems and high speed rotating systems, which require sound dynamic design, i.e. desired dynamic characteristics like vibration levels, response, resonances, eigenvalues, dynamic stability and mode shapes.

Keywords: structural dynamic modification, reanalysis, FEM, eigenvalues, design variables

Faculty of Mechanical Engineering, University of Belgrade, date: November 23, 2007.

Committee: Dr Radica Prokić-Cvetković–assoc. prof. (mentor), Dr Zijah Burzić, VTI, Belgrade (co-mentor), Dr Aleksandar Sedmak–full professor.

Science topic: mechanical engineering

Special topics: structural integrity and life, fracture mechanics, materials science

Abstract

Certain components of processing and thermal power plant equipment including steam line operating at high temperature and high pressure conditions are critical as a result of specific design parameters. Each potential failure of these components presents danger, not only to the power plant, but to the surrounding environment as well. The problem is additionally complicated with the presence of welded joints that do not exclude the possibility of existence of defects such as cracks.

For service safety of processing equipment structures, designed for service in thermal power plants, the most important characteristics are those that describe crack growth under variable load conditions. In case of damage, component integrity needs to be carefully examined and the conditions of further exploitation determined.

Research in this doctoral dissertation includes the effect of working conditions (service time and temperature) on base material and welded joints of high alloy steel at high temperature and variable loading conditions. This research is based on the high

X20 CrMoV 12-1 (X20) namenjen za izradu vitalnih komponenti termoenergetskih postrojenja kao i na njegove zavarene spojeve.

Značaj ovih istraživanja dobija na težini imajući na umu aktuelne trendove revitalizacije termoenergetskih postrojenja, zbog čega se u poslednje vreme obavljaju brojna ispitivanja visokolegiranih materijala za rad na povišenim temperaturama. Savremeni pristup pod revitalizacijom podrazumeva osiguranje potpunog radnog veka i ocenu preostalog radnog veka. Praćenje i kontrola osobina konstrukcionih materijala visokotemperaturski opterećenih delova, izloženih i visokom pritisku u korozivno aktivnim sredinama, predstavlja osnovni pokazatelj pouzdanosti njihovog rada.

Na osnovu prezentiranih rezultata ispitivanja uticaja eksploatacionih uslova na ponašanje osnovnog materijala i zavarenog spoja visokolegiranih čelika X20, definisani su osnovni parametri i kriterijumi prihvatljivosti koji će omogućiti sigurnost u eksploataciji komponenti termoenergetskih postrojenja namenjenih za rad u uslovi- ma delovanja promenljivog opterećenja i povišenih temperatura.

Ključne reči: visokolegirani čelik X20, energija udara, žilavost loma, promenljivo opterećenje, visokociklični zamor, Parisov zakon, parametri rasta zamorne prslina

Mersida Manjgo, KRITERIJUM PRIHVATLJIVOSTI PRSLINA U ZAVARENOM SPOJU POSUDA POD PRITISKOM OD MIKROLEGIIRANIH ČELIKA
(*Crack acceptance criteria in welded joint of micro alloyed steel pressure tanks*)

Mašinski fakultet Univerziteta u Beogradu, datum: 5.5.2008.
Komisija: red. prof. dr Aleksandar Sedmak (mentor), red. prof. dr Taško Maneski (komentor), vanr. prof. dr Radica Prokić-Cvetković, dr Zijah Burzić, naučni savetnik VTI–Beograd, dr Vencislav Grabulov, viši naučni saradnik IMS, Beograd.

Naučna oblast: mašinstvo

Uža naučna oblast: integritet konstrukcije, mehanika loma
Apstrakt

Osnovni prilaz u istraživanju je razrada kriterijuma prihvatljivosti prslina u zavarenim spojevima posuda pod pritiskom od mikrolegiranih čelika primenom parametara mehanike loma.

Procena integriteta zavarenih konstrukcija zahteva detaljnu eksperimentalnu i analitičku analizu, pa je analiziran uticaj geometrije (položaj prslina, dimenzije i oblik zavarenog spoja) kao i heterogenost materijala na ponašanje i ocenu integriteta zavarenih spojeva. Analiziran je uticaj količine unete toplote pri termičkoj simulaciji na udarne karakteristike, kao i promena učesća krte i duktilne komponente u ukupnoj energiji udara. Posebno je analiziran uticaj jednoprolazne i dvoprolazne simulacije ZUT na ukupnu energiju udara ispitivanog čelika povišene čvrstoće NIOMOL 490K.

Data je ocena sklonosti ka inicijaciji i propagaciji prslina ispitivanjem Šarpi epruveta. Prikazani su rezultati eksperimentalnog određivanja parametara rasta zamorne prslina zavarenog spoja mikrolegiranog čelika. Analizirano je kako heterogenost strukture i mehaničkih svojstava MŠ i ZUT utiče na pojavu i rast prslina, odnosno, parametre rasta zamorne prslina. Ovaj podatak je vrlo važan kod izbora tehnologija zavarivanja za konstrukcije koje su u eksploataciji izložene dugotrajnom promenljivom opterećenju, i gde je verovatnoća greške tipa prslina realna. Opisan je novi, savremeni sistem za praćenje rasta zamorne prslina koji se bazira na promeni otpornosti merne folije pri rastu prslina. Sistem je kompatibilan osnovnim postavkama standarda ASTM E 647-95 koji se odnosi na određivanje brzine rasta zamorne prslina. Dosta je praktičan, jer pored računarskog praćenja rasta zamorne prslina, to omogućava i manuelno u lokalnu.

Kako prslina utiču na čvrstoću i plastičnost, analiziran je uticaj geometrije i heterogenosti materijala na ponašanje i ocenu integriteta zateznih ploča. Eksperimentalnom analizom obuhvaćene su prslina u MŠ i ZUT, a za rešavanje ovog problema primenjena je analiza trodimenzionalnim konačnim elementima, čime je omogućen detaljan uvid u ponašanje zavarenih ploča kao i procena integriteta.

Ključne reči: zavareni spoj, brzina rasta prslina, prag zamora, površinska prslina, integritet konstrukcije

alloy X20 CrMoV 12-1 (X20) steel, designed for vital components of thermal power plants and its welded joints.

The importance of this research is especially valuable having in mind actual trends of thermal power plants revitalization processes. As a result, there have lately been a number of studies of high alloy materials under high temperature service. Modern approach under revitalization implies ensuring complete design life, as well as review of the remaining design life. Monitoring and control of high temperature loaded parts of structural material characteristics exposed to high pressure in corrosively active environment, present the primary indicator of their tested quality and safety.

Based on results of presented research of service conditions effecting behaviour of base material and welded joint of high alloy X20 steel, basic parameters and plausibility criteria that will enable safety of thermal power plant components service, designed for high temperature and variable load service conditions are defined.

Keywords: high alloy X20 steel, impact energy, ductile fracture, variable load, high cyclic fatigue, Paris law, fatigue crack growth parameters

Faculty of Mechanical Engineering, University of Belgrade, date: May 5, 2008.

Committee: Dr Aleksandar Sedmak–full professor (mentor), Dr Taško Maneski–full professor (co-mentor), Dr Radica Prokić-Cvetković–assoc. prof., Dr Zijah Burzić, scientific advisor VTI–Belgrade, Dr Vencislav Grabulov, high. scientific assoc., IMS–Belgrade.

Science topic: mechanical engineering

Special topics: structural integrity, fracture mechanics

Abstract

Basic approach of research is development of criterion for crack acceptance in welded joint of micro alloyed steel on pressure tanks by using mechanic fracture parameters.

Structural integrity assessment of welds requires detailed experimental and analytical analysis, therefore an influence of geometry (crack location, welded joint dimensions and shape) and material heterogeneity to the behaviour and integrity of welds is analysed. The influence of heat input in thermal simulation on main characteristics is analysed and the varying change of brittle and ductile component of total impact energy. Influence of single- and double-pass simulation of HAZ on the total impact energy of the examined NIOMOL 490K high strength steel is also analysed.

Susceptibility to crack initiation and propagation is evaluated by Charpy specimen test. Experimental results are given of the determined fatigue crack growth parameters for the micro alloyed steel weld. Structural heterogeneity and mechanical properties of WM and HAZ influencing the occurrence and growth of cracks, i.e. fatigue crack growth parameters, is also shown. These data are very important in selecting the welding technology for structures exposed to long-term variable loads, and where the possibility of crack-like defect is real. A new modern system for monitoring fatigue cracks is described, based on the change in resistance of the testing foil during crack growth. The system is compatible to basic ASTM E 647-95 standards related to determining fatigue crack growth rate. It is very practical since it provides both computer- and manual monitoring of fatigue crack growth, locally.

As cracks influence strength and plasticity, the influence of geometry and material heterogeneity on the behaviour and integrity of tensile plates is analysed. Experimental analysis included cracks in WM and HAZ, and for solving this problem, three-dimensional finite element analysis is applied, giving a detailed insight into the behaviour of welded plates and integrity assessment.

Keywords: welded joint, crack growth rate, fatigue threshold, surface crack, structural integrity

KALENDAR SKUPOVA jul–decembar 2008 – CALENDAR OF EVENTS July–December 2008

Naslov – Title	Datum – Date	Mesto – Place	Obaveštenja – Information
Third International Conference on Engineering Failure Analysis	13-16 Jul.	Barcelona, Spain	www.eurekaalert.org/pub_releases/2007-09/etic_1090507.php
International Pipelines Conference 2008	22-27 Jul.	Atlanta, Georgia, USA	http://content.asce.org/conferences/pipelines2008/index.html
ASME 2008 Pressure Vessels and Piping Conference	27-31 Jul.	Chicago, Illinois, USA	www.asmeconferences.org/PVP08/Organizers.cfm
17 th European Conference on Fracture (ECF 17)	2-5 Sep.	Brno, Czech R.	http://ecf17.vutbr.cz/
YUCOMAT 2008	8-12 Sep.	Herceg Novi, Montenegro	www.yu-mrs.org.yu
Sixth International Conference on Low Cycle Fatigue	8-12 Sep.	Berlin, Germany	www.dvm-berlin.de
Reliability, Safety and Diagnostics of Transport Structures and Means (3 rd International Conference)	24-26 Sep.	Pardubice, Czech Rep.	http://rsd.upce.cz
25 th Danubia-Adria Symposium on Advances in Experimental Mechanics	24-27 Sep.	Ceske Budejovice	http://danubia-adria.cz
International Conference: Welding and Related Technologies into the Third Millennium	24-26 Nov.	Kiev, Ukraine	www.paton.kiev.ua , www.iaw.com.ua

KALENDAR SKUPOVA 2009 – CALENDAR OF EVENTS 2009

Naslov – Title	Datum – Date	Mesto – Place	Obaveštenja – Information
First International Conference on Multifunctional, Hybrid and Nanomaterials	15-19 Mar.	Tours, France	www.hybridmaterialsconference.com
Second International Conference on Material and Component under Variable Amplitude Loading	23-26 Mar.	Darmstadt, Germany	www.dvm-berlin.de/index.php?id=447
17 th International Conference on Wear of Materials	19-22 Apr.	Las Vegas, USA	www.wom-conference.elsevier.com
2 nd International Creep Conference: Creep & Fracture in High Temperature - Design & Life Assessment Issues	21-23 Apr.	Zurich, Switzerland	www.etd1.co.uk
International Conference on Computational Methods for Coupled Problems in Science and Engineering	8-11 May	Ischia, Italy	http://congress.cimne.upc.es/coupled09
International Conference on Adaptive Modeling and Simulation - ADMOS 2009	25-27 May	Brussels, Belgium	http://congress.cimne.upc.es/admos09
OPTI 2009 – Eleventh International Conference on Optimum Design of Structures and Materials	8-10 Jun.	Algarve, Portugal	www.wessex.ac.uk/conferences/2009/index.html
Fatigue and Fracture 2009	26-29 Jun.	Philadelphia, USA	http://ffconf.atlss.lehigh.edu
ICME 2009: International Conference on Mechanical Engineering	8-11 Jul.	Paris, France	www.waset.org/icme2009
12 th International Conference on Fracture (ICF 12)	12-17 Jul.	Ottawa, Canada	www.icf12.com
17 th International Conference on Composite Materials (ICCM–17)	27-31 Jul.	Edinburgh, UK	www.iom3.org/events/iccm17.htm
20 th International Conference on Structural Mechanics in Reactor Technology (SMiRT 20)	9-14 Aug.	Espoo (Helsinki), Finland	www.vtt.fi/proj/smirt20
15 th International Conference on the Strength of Materials	16-21 Aug.	Dresden, Germany	www.icsma-15.org/?node=4
EuroMat 2009: European Congress on Advanced Materials and Processes	7-10 Sep.	Glasgow, Scotland	www.euromat2009.fems.org
ICOSSAR 2009 – 10 th International Conference on Structural Safety and Reliability	13-17 Sep.	Osaka, Japan	www.sc.kutc.kansai-u.ac.jp/icossar2009

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Podnošenje radova i apstrakta, 31. maj 2008.

17th European Conference on Fracture (ECF16) MULTILEVEL APPROACH TO FRACTURE OF MATERIALS, COMPONENTS AND STRUCTURES, BRNO, CZECH REPUBLIC, SEPTEMBER 2-5, 2008

ECF17 will focus on all aspects of fracture of engineering materials, components and structures. A special emphasize will be given to a multiscale investigation of damage processes on atomistic, mesoscopic and macroscopic levels. Thus, conference topics will focus on following fields:

Different level of approaches to fracture analyses: fracture at atomistic and molecular scales, meso- and micromechanics and micromechanisms of fracture, linear and nonlinear fracture mechanics etc.

Physical aspects of fracture: brittle fracture, ductile fracture, fatigue, fretting fatigue, mixed mode fractures, creep, temperature and environmental effects, strain rate effects etc.

Advanced engineering materials in the service: metals, ceramics, polymers and their composites, smart materials and structures, biomaterials, nanostructured materials, etc.

Structure and component integrity topics: probabilistic approaches to fracture, reliability and life of components and structures, failure analysis and case studies, scaling and size effects, damage mechanics etc.

The European Structural Integrity Society (ESIS) will support a participation of selected young scientists and/or PhD students from developing countries (based on recommendation of local ESIS chapters).

This support is intended for young participants from following European countries: Bulgaria, Croatia, Latvia, Lithuania, Romania, Russia, **Serbia**, Ukraine. For further close instructions on the selection of participants please visit website:

<http://ecf17.fme.vutbr.cz>

Deadlines

Submission of full papers and one-page abstracts May 31, 2008

12. međunarodna konferencija o lomu (ICF 12) – OTAVA (KANADA), 12–17. JUNA, 2009



12th International Conference on Fracture (ICF 12) – OTTAWA (CANADA), JUNE 12–17, 2009

Međunarodna grupa za lom i Organizacioni komitet Kanade za ICF12 poziva sve zainteresovane u svim oblastima istraživanja loma da učestvuju na ovoj konferenciji, koja će se održati u Otavi, Ontario, Kanada, od 12. do 17. jula 2009.

Konferencija će pokriti najnovije istraživanja u razvoju mehanike i mehanizama loma, zamora i čvrstoće materijala.

Autori se pozivaju da pošalju apstrakte na engleskom jeziku, koji će se razmatrati za prezentacije na konferenciji. Krajnji rok za podnošenje apstrakta je 15. jun 2008. Molimo autore da za pripremu i slanje apstrakta poštuju uputstva na:

http://www.icf12.org/e/02_a_submission_e.shtml

Rokovi:

- krajnji rok za podnošenje apstrakta: 15. jun 2008.
- potvrda prihvatanja apstrakta: 15. avgust 2008.
- rok za podnošenje radova: 30. oktobar 2008.
- potvrda prihvatanja radova: 15. februar 2009.

Više informacija ima na: www.icf12.org

The International Fracture Group and the Canadian Organizing Committee for ICF12 invite all those interested in all aspects of fracture research to participate in this conference to be held in Ottawa, Ontario, Canada from July 12–17, 2009.

The Conference will cover the latest developments in mechanics and mechanisms of fracture, fatigue and strength of solids.

Authors are invited to submit an abstract in English to be considered for a paper presentation at the Conference. The deadline for submission of abstracts is June 15, 2008. Authors are asked to submit abstracts using the online abstract submission link:

http://www.icf12.org/e/02_a_submission_e.shtml

Key deadlines:

- deadline for Submission of Abstracts: June 15, 2008
- notice of Acceptance of Abstracts: August 15, 2008
- deadline for Submission of Papers: October 30, 2008
- notice of Acceptance of Papers: February 15, 2009

For more information please visit: www.icf12.org