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Date revised: 4 August 2021

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- Fatigue and fracture mechanics
- Hardfacing and microjoining
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- Quality control
- Safety and health
- Soldering
- Thermal cutting
- Thermal spraying
- Welding

The database is indexed with terms from the International Welding Thesaurus, which can be found at: http://www.iiwelding.org.

Date Coverage
1966 - 2020

Update Frequency
Closed

Geographic Coverage
International

Document Types
Journal Articles, Conference Proceedings, Standards, Books, Reports, Theses (Dissertations)

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TI

Hot cracking in pulsed laser processing of a nickel based superalloy up by electrospark deposition

AU,AUFN,AULN

EBRAHIMNIA, M; MALEK, GHAINI F; Shahverdi, H R. **Science and Technology of Welding and Joining** 19.1: .25-29. (Jan 2014)

Highlighting: Off | Single | Multi

AB

Abstract (summary) Translate

The susceptibility to hot cracking of precipitation hardened Inconel 738 LC (IN738LC) (Ni, 0.10%C, 15.50%Cr, 9.8%Co, 3.04%W, 2.27%Mo, 0.70%Nb, 0.09%Fe, 4.36%Al, 3.15%Ti, 1.81%Ta, 0.04%Zr, 0.01%B) fabricated via electrospark deposition (ESD) on substrate of the same material and subjected to pulse laser welding was investigated. A rectangle (10 x 10 x 0.5 mm) was machined out of IN738LC plates (100 x 50 x 5 mm) and filled by means of ESD (deposition time ca. 150 min; shielding gas coaxis argon; shielding gas flow rate 15 l/min; electrode rotation speed 2500 rev/min; voltage 100 V; pulse frequency 250 Hz; duty cycle 3.5%; current 3.5 A) using IN738LC electrodes. Several ESD build-up samples underwent pulsed laser remelt processing using a pulsed Nd:YAG laser (max. beam power 400 W; shielding gas flow rate 0.16 l/s; focal length 75 mm; spot diameter 1 mm; pulse frequency 20 Hz; pulse duration 7 ms; energy per pulse 7 J; overlap factor 0% to ca. 40%). Specimens were obtained from the welded samples, and the microstructures of the ESD, laser remelted and parent metals were characterised, focusing on liquation and solidification cracking behaviour. The results are discussed with regard to the microstructural features produced by ESD that influence liquation and solidification cracking.

Indexing (details) Cite

SU

Subject	WELDABILITY AND METALLURGY; Technical; REFERENCE LISTS; NICKEL ALLOYS; RADIATION WELDING; PHOTON BEAM WELDING; LASER WELDING; PULSED LASER WELDING; DEPOSITION; DEPOSITED METAL; DEFECTS; CRACKING; HOT CRACKING; HEAT AFFECTED ZONE; MICROSTRUCTURE; MELTING; WELDABILITY; MATERIALS WELDABILITY; METALLURGICAL WELDABILITY
Identifier (keyword)	ELECTROSPARK DEPOSITION
Title (ID, TI)	Hot cracking in pulsed laser processing of a nickel based superalloy up by electrospark deposition
Author (AU,AUFN,AULN)	EBRAHIMNIA, M; MALEK, GHAINI F; Shahverdi, H R
Author affiliation (AF)	TARBIAT MODARES UNIVERSITY
Language (LA)	English
Language of abstract (SL)	ENG
Document treatment (DTX)	Experimental
Document type (DTYPE)	Article
Document feature (DF)	42 references, 4 figures

PUB	Publication title	Science and Technology of Welding and Joining
SRC	Source details	Science and Technology of Welding and Joining, vol.19, no.1. Jan.2014. pp.25-29. 4 fig., 42 ref.
VO	Volume	19
ISS	Issue	1
PG	Pagination	pp.25-29
ISSN	ISSN	1362-1718, 1743-2936
PSTYPE	Publication type	Scholarly Journals
NT	Notes	Photocopy available from TWI
DOI	DOI	http://dx.doi.org/10.1179/1362171813Y.0000000157
	URL	http://www.maneyonline.com/doi/pdfplus/10.1179/1362171813Y.0000000157
PD,YR	Publication date	Jan 2014
	Source attribution	Weldasearch, © Publisher specific
AN	Accession number	259767
	Document URL	http://search.proquest.com/professional/docview/1528863604?accountid=166878
FAV	First available	2014-05-28
UD	Updates	2014-05-28
	Database	Weldasearch® (1966 - current)

Search fields

Field Name	Field Code	Example	Description and Notes
Abstract	AB	ab("laser remelt processing")	Use adjacency and/or Boolean operators to narrow search results.
Abstract present	ABANY	"IN738LC electrodes" AND abany(yes)	Add: *AND ABANY(YES)* to a query to limit retrieval to records with abstracts.
Accession number	AN	an(259767)	A unique document identification number assigned by the information provider.
All fields	ALL	all("resistance spot welding")	Searches all fields in bibliographic files.
All fields + text	--	"resistance spot welding"	Same as ALL field code: searches all fields.
Author[1] Author First Name Author Last Name	AU AUFN AULN	au(malek, ghaini f) aufn(ghaini) auln(malek)	Includes all authors. Also searchable via the Look Up Citation tool.
First author	FAU	fau(ebrahimnia, m)	Use FAU to find only the first author of a document. Additional authors will not be searched. Displayed within Author.
Author affiliation	AF	af(tarbiat modares university)	Displays in Author field. Not available in all documents. Includes as much data as is available in the original document, such as department, organization, address, city, state, country, author email, etc.
Company/ organization[1]	CO	co(hypertherm)	
Conference information	CF	cf(International Symposium N/3 belgium)	Displays as part of Conference title field. May contain Conference name, location, year, etc.
Conference event start date	ESDT	esdt(1986-11-12)	Event Start date also searchable with CDT. All conference information searchable with CF.
Conference event end date	EVDT	evdt(1986-11-13)	Also searchable with CF.

[1] A Lookup/Browse feature is available for this field in the Advanced Search dropdown or in Browse Fields.

Field Name	Field Code	Example	Description and Notes
Conference title	CFTI	cfti(International Thermal Spray Conference)	
DOI	DOI	doi(10.1179/1362171813Y.0000000157)	Digital Object Identifier. Search the portion of the DOI that comes after http://dx.doi.org/.
Document feature	DF	df(42 references)	Numbers of tables, references, figures, etc.
Document title	TI	ti("Hot cracking in pulsed laser processing of a nickel based superalloy")	Includes alternate title (OTI) and subtitle, but not Publication Title (PUB).
Document treatment	DTX	dtx(experimental)	
Document type	DTYPE	dtype(article)	
First available	FAV	fav(2014-05-28)	Indicates the first time a document was loaded in a specific database on Dialog. It will not change however many times the record is subsequently reloaded, as long as the accession number does not change.
From database[2]	FDB	composites AND fdb(weldasearch) composites AND fbd(1008483)	Useful in multi-file searches to isolate records from a single file. FDB cannot be searched on its own; specify at least one search term then AND it with FDB.
Identifiers	IF	if("electrospark deposition")	Uncontrolled vocabulary terms.
ISBN	ISBN	isbn(0-912035-82-X)	
ISSN	ISSN	issn(1362-1718) issn(13621718)	
Issue	ISS	iss(1)	Also searchable via the Look Up Citation tool.
Journal name	JN	jn("science and technology" PRE/4 welding)	Journal names only. For complete Publication name types, use PUB. Also searchable via the Look Up Citation tool for Publication name.
Language	LA	la(english)	
Language of abstract	SL	sl(English)	
Notes	NT	nt(photocopy available from TWI) nt("See also Weldasearch 171534")	
Pagination	PG	pg(25-29)	
Patent application date	APD	apd(1997-04-15)	
Patent application number	APN	apn(9371096)	
Patent assignee	PA	pa(matsushita)	
Patent information	PAT	pat(fronius and 20030132211)	
Patent number	PN	pn(1190808)	
Patent publication date	PDA	pda(20020327)	

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Field Name	Field Code	Example	Description and Notes
Patent publication country	PBC	pbc(ep)	
Publication date	PD	pd(201401) pd(201401-201403)	Also searchable via the Look Up Citation tool.
Publication title[1]	PUB	pub("science and technology of welding and joining")	Title of publication where document originally appeared. Also searchable via the Look Up Citation tool.
Publication type	PSTYPE	pstype(books)	
Publication year	YR	yr(2011)	Single year or a range of years may be searched.
Source information	SRC	src("brazing and soldering today")	Includes Publication title, Volume, Issue, ISSN, Publication date, and Pagination. Also searchable via the Look Up Citation tool.
Start page	PAGE	page(25)	First page number – displayed within Pagination. Searchable on the Look Up Citation tool.
Subject[1]	SU	su("liquation cracking")	
URL	URL	url(http://www.ingentaconnect.com/content/maney/stwj)	
Updates	UD	ud(2014-05-28)	The date(s) the record was loaded as a result of an update provided by the supplier.
Volume	VO	vo(19)	Also searchable via the Look Up Citation tool.

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KWIC (Keyword in Context)	**Detailed view** plus all occurrences of your search term highlighted in the field(s) where the terms occur.	✓	✓
Preview	**Detailed view** plus Author, Publication title, Volume, Issue, Pagination, Subject, and the portion of the Abstract with the search term highlighted. Available online only.	✓	
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