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June 30, 2008

Attorney Docket No.: 06618-637003/3220-C-C

Commissioner for Patents
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Presented for filing is a new continuation patent application of:

Applicant: HUI JIN, AAMOD KHANDEKAR AND ROBERT J. MCELIECE

Title: SERIAL CONCATENATION OF INTERLEAVED
CONVOLUTIONAL CODES FORMING TURBO-LIKE CODES

Assignee: California Institute of Technology

Enclosed are the following papers, including those required to receive a filing date under 37 C.F.R. § 1.53(b):

	<u>Pages</u>
Specification	17
Claims	5
Abstract	1
Declaration	4
Drawings	5

Enclosures:

- Form PTO-1449, listing documents cited in the parent applications (3 pages). Please confirm that these have been considered in this application by returning a copy of the Form PTO-1449 with the examiner's initials.
- Rule 63 declaration, copy from a previous application under rule 63(d) for continuation or divisional only.
- Small entity statement. See 37 CFR 1.27.

This application is entitled to small entity status.

This application is a continuation (and claims the benefit of priority under 35 U.S.C. § 120) of U.S. Application Serial No. 11/542,950, filed October 3, 2006, which is a continuation of U.S. Application Serial No. 09/861,102, filed May 18, 2001, now U.S. Patent No. 7,116,710, which claims the priority of U.S. Provisional Application Serial No. 60/205,095, filed May 18, 2000, and is a continuation-in-part of U.S. Application Serial No. 09/922,852, filed August 18, 2000, now U.S. Patent No.

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7,089,477. The disclosure of the prior applications are considered part of (and are incorporated by reference in) the disclosure of this application.

	<u>Small Entity</u>	<u>Large Entity</u>	
Basic Filing Fee	75	310	\$75
Search Fee	255	510	\$255
Examination fee	105	210	\$105
Total Claims 23 over 20	3 x \$25	25 50	\$75
Independent Claims 3 over 3	0 x \$105	105 210	\$0
Fee for Multiple Dependent claims	185	370	\$0
Fee for each additional 50 pages of Specification and Drawings over 100	130	260	\$0
Total Filing fee			\$510

The filing fee in the amount of \$510 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply all charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 06618-637003.

If this application is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at (858) 678-5070.

Please direct all correspondence to the following:

20985

PTO Customer Number

Respectfully submitted,

/John F. Conroy, Reg. # 45,485/

John F. Conroy
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Enclosures
JFC/jhp

Substitute Form PTO-1449 (Modified) Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 06618-637003	Application No. Not yet assigned
	Applicant Hui Jin et al.		Filing Date June 30, 2008
			Group Art Unit

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	2001/0025358	09/2001	Eidson et al.			
	AB	5,392,299	02/1995	Rhines et al.			
	AC	5,530,707	06/1996	Lin			
	AD	5,751,739	05/1998	Seshadri et al.			
	AE	5,802,115	09/1998	Meyer			
	AF	5,881,093	03/1999	Wang et al.			
	AG	6,014,411	01/2000	Wang			
	AH	6,023,783	02/2000	Divsalar et al.			
	AI	6,031,874	02/2000	Chennakeshu et al.			
	AJ	6,032,284	02/2000	Bliss			
	AK	6,044,116	03/2000	Wang			
	AL	6,094,739	07/2000	Miller et al.			
	AM	6,396,423	05/2002	Laumen et al.			
	AN	6,437,714	08/2002	Kim et al.			
	AO	6,859,906	02/2005	Hammons et al.			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AP							
	AQ							
	AR							

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	AS	Benedetto, S., et al., "A Soft-Input Soft-Output APP Module for Iterative Decoding of Concatenated Codes," <i>IEEE Communications Letters</i> , 1(1):22-24, January 1997.
	AT	Benedetto, S., et al., "A Soft-Input Soft-Output Maximum A Posteriori (MAP) Module to Decode Parallel and Serial Concatenated Codes," <i>The Telecommunications and Data Acquisition Progress Report (TDA PR 42-127)</i> , pp. 1-20, November 1996.

Examiner Signature	Date Considered
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EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Other Documents (include Author, Title, Date, and Place of Publication)		
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	AU	Benedetto, S., et al., "Bandwidth efficient parallel concatenated coding schemes," <i>Electronics Letters</i> , 31(24):2067-2069, November 1995.
	AV	Benedetto, S., et al., "Design of Serially Concatenated Interleaved Codes," <i>ICC 97</i> , vol. 2, pp. 710-714, June 1997.
	AW	Benedetto, S., et al., "Parallel Concatenated Trellis Coded Modulation," <i>ICC 96</i> , vol. 2, pp. 974-978, June 1996.
	AX	Benedetto, S., et al., "Serial Concatenated Trellis Coded Modulation with Iterative Decoding," <i>Proceedings 1997 IEEE International Symposium on Information Theory (ISIT)</i> , Ulm, Germany, p. 8, June 29-July 4, 1997.
	AY	Benedetto, S., et al., "Serial Concatenation of Interleaved Codes: Performance Analysis, Design, and Iterative Decoding," <i>The Telecommunications and Data Acquisition Progress Report (TDA PR 42-126)</i> , pp. 1-26, August 1996.
	AZ	Benedetto, S., et al., "Serial concatenation of interleaved codes: performance analysis, design, and iterative decoding," <i>Proceedings 1997 IEEE International Symposium on Information Theory (ISIT)</i> , Ulm, Germany, p. 106, June 29-July 4, 1997.
	BA	Benedetto, S., et al., "Soft-Output Decoding Algorithms in Iterative Decoding of Turbo Codes," <i>The Telecommunications and Data Acquisition Progress Report (TDA PR 42-124)</i> , pp. 63-87, February 1996.
	BB	Berrou, C., et al., "Near Shannon Limit Error - Correcting Coding and Decoding: Turbo Codes," <i>ICC 93</i> , vol. 2, pp. 1064-1070, May 1993.
	BC	Digital Video Broadcasting (DVB) - User guidelines for the second generation system for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications (DVB-S2), ETSI TR 102 376 V1.1.1 Technical Report, pp. 1-104 (pg. 64), February 2005.
	BD	Divsalar, D., et al., "Coding Theorems for 'Turbo-Like' Codes," <i>Proceedings of the 36th Annual Allerton Conference on Communication, Control, and Computing</i> , Monticello, Illinois, pp. 201-210, September 1998.
	BE	Divsalar, D., et al., "Effective free distance of turbo codes," <i>Electronics Letters</i> , 32(5):445-446, February 1996.
	BF	Divsalar, D., et al., "Hybrid Concatenated Codes and Iterative Decoding," <i>Proceedings 1997 IEEE International Symposium on Information Theory (ISIT)</i> , Ulm, Germany, p. 10, June 29-July 4, 1997.
	BG	Divsalar, D., et al., "Low-Rate Turbo Codes for Deep-Space Communications," <i>Proceedings 1995 IEEE International Symposium on Information Theory (ISIT)</i> , Whistler, BC, Canada, p. 35, September 1995.
	BH	Divsalar, D., et al., "Multiple Turbo Codes for Deep-Space Communications," <i>The Telecommunications and Data Acquisition Progress Report (TDA PR 42-121)</i> , pp. 66-77, May 1995.
	BI	Divsalar, D., et al., "Multiple Turbo Codes," <i>MILCOM '95</i> , vol. 1, pp. 279-285, November 1995.
	BJ	Divsalar, D., et al., "On the Design of Turbo Codes," <i>The Telecommunications and Data Acquisition Progress Report (TDA PR 42-123)</i> , pp. 99-121, November 1995.
	BK	Divsalar, D., et al., "Serial Turbo Trellis Coded Modulation with Rate-1 Inner Code," <i>Proceedings 2000 IEEE International Symposium on Information Theory (ISIT)</i> , Sorrento, Italy, pp. 194, June 2000.
	BL	Divsalar, D., et al., "Turbo Codes for PCS Applications," <i>IEEE ICC '95</i> , Seattle, WA, USA, vol. 1, pp. 54-59, June 1995.

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Other Documents (include Author, Title, Date, and Place of Publication)		
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	BM	Jin, H., et al., "Irregular Repeat - Accumulate Codes," <i>2nd International Symposium on Turbo Codes</i> , Brest, France, 25 pages, September 2000.
	BN	Jin, H., et al., "Irregular Repeat - Accumulate Codes," <i>2nd International Symposium on Turbo Codes & Related Topics</i> , Brest, France, pg. 1-8, September 2000.
	BO	Richardson, T.J., et al., "Design of Capacity-Approaching Irregular Low-Density Parity-Check Codes," <i>IEEE Transactions on Information Theory</i> , 47(2):619-637, February 2001.
	BP	Richardson, T.J., et al., "Efficient Encoding of Low-Density Parity-Check Codes," <i>IEEE Transactions on Information Theory</i> , 47(2):638-656, February 2001.
	BQ	Wiberg, N., et al., "Codes and Iterative Decoding on General Graphs," <i>Proceedings 1995 IEEE International Symposium on Information Theory (ISIT)</i> , Whistler, BC, Canada, p. 468, September 1995.

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Substitute Disclosure Form (PTO-1449)

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