

<b>PATENT ASSIGNMENT COVER SHEET</b>
--------------------------------------

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4478419

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA	06/23/2008
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	LAWRENCE LIVERMORE NATIONAL SECURITY, LLC
<b>Street Address:</b>	LAWRENCE LIVERMORE NATIONAL LABORATORY
<b>Internal Address:</b>	7000 EAST AVENUE, L-703
<b>City:</b>	LIVERMORE
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	94551-9234
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15421141
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(650)938-5200
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	(415) 875-2316
<b>Email:</b>	asanchez@fenwick.com
<b>Correspondent Name:</b>	SUSAN T. HUBL
<b>Address Line 1:</b>	FENWICK & WEST LLP
<b>Address Line 2:</b>	801 CALIFORNIA STREET
<b>Address Line 4:</b>	MOUNTAIN VIEW, CALIFORNIA 94041
<b>ATTORNEY DOCKET NUMBER:</b>	/35444/US
<b>NAME OF SUBMITTER:</b>	SUSAN T. HUBL, REG. NO. 47,668
<b>SIGNATURE:</b>	/Susan T. Hubl/
<b>DATE SIGNED:</b>	06/26/2017
<b>Total Attachments: 24</b>	
source=35444 US Assignment Corporation to Corporation#page1.tif	
source=35444 US Assignment Corporation to Corporation#page2.tif	
source=35444 US Assignment Corporation to Corporation#page3.tif	
source=35444 US Assignment Corporation to Corporation#page4.tif	

source=35444 US Assignment Corporation to Corporation#page5.tif  
source=35444 US Assignment Corporation to Corporation#page6.tif  
source=35444 US Assignment Corporation to Corporation#page7.tif  
source=35444 US Assignment Corporation to Corporation#page8.tif  
source=35444 US Assignment Corporation to Corporation#page9.tif  
source=35444 US Assignment Corporation to Corporation#page10.tif  
source=35444 US Assignment Corporation to Corporation#page11.tif  
source=35444 US Assignment Corporation to Corporation#page12.tif  
source=35444 US Assignment Corporation to Corporation#page13.tif  
source=35444 US Assignment Corporation to Corporation#page14.tif  
source=35444 US Assignment Corporation to Corporation#page15.tif  
source=35444 US Assignment Corporation to Corporation#page16.tif  
source=35444 US Assignment Corporation to Corporation#page17.tif  
source=35444 US Assignment Corporation to Corporation#page18.tif  
source=35444 US Assignment Corporation to Corporation#page19.tif  
source=35444 US Assignment Corporation to Corporation#page20.tif  
source=35444 US Assignment Corporation to Corporation#page21.tif  
source=35444 US Assignment Corporation to Corporation#page22.tif  
source=35444 US Assignment Corporation to Corporation#page23.tif  
source=35444 US Assignment Corporation to Corporation#page24.tif

15/421,141

**ASSIGNMENT**

For good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR(S),

The Regents of the University of California, a California Corporation, having its statewide administrative offices located 1111 Franklin Street, 5<sup>th</sup> Floor, Oakland, CA 94607-5200,

hereby sells, assigns and transfers to ASSIGNEE,

Lawrence Livermore National Security, LLC, located at Lawrence Livermore National Laboratory, 7000 East Avenue, L-703, Livermore, CA 94551-9234, and the successors, assigns and legal representatives of the ASSIGNEE

all of its right, title and interest in certain U.S. patents arising under Contract W-7405-ENG-48, which are identified by U.S. Patent Number on the attached list (entitled "Patent Properties").

Executed in Oakland, California this 23rd day of June, 2008.

The Regents of the University of California

  
Signature

Name: William T. Tucker

Title: Executive Director, Research Administration  
and Technology Transfer

**PATENT PROPERTIES**

4811340  
4873218  
4997804  
5003987

5053336  
5080706  
5081163  
5091639  
5098085  
5098550  
5099311  
5105428  
5108900  
5114876  
5120421  
5140158  
5150313  
5155331  
5175970  
5175974  
5181224  
5189302  
5208977  
5209819  
5218315  
5221211  
5238408  
5242847  
5250855  
5274271  
5275796  
5278723  
5280492  
5282944  
5284539

5285310  
5285113  
5286361  
5307430  
5325918  
5332938  
5333728  
5334528  
5339274  
5341369  
5345471  
5346307  
5346950  
5356802  
5359988  
5361070  
5366721  
5376356  
5381944  
5382895  
5389445  
5392981  
5393619  
5395481

5395805  
5399231  
5402308  
5404028  
5406683  
5413812  
5414278  
5414688  
5416376  
5420168  
5422607  
5425858

5427832  
5428882  
5429925  
5434020  
5434336  
5438739  
5437773  
5437903

5448251  
5451781  
5456789  
5458808  
5457394  
5454581  
5455084  
5455128  
5488572  
5468886  
5471182  
5475578  
5477048  
5479120  
5489489  
5488277  
5487834  
5488012  
5488062  
5481280  
5485141  
5485176  
5488221  
5505799  
5508066  
5508341  
5508580  
5510800

5512834  
5515401  
5516972  
5517108  
5517516  
5519342  
5519400  
5521381  
5521600  
5523750  
5525168  
5526359  
5526871  
5534077  
5535049  
5536554  
5538785  
5538915  
5539212  
5541948  
5547715  
5548257  
5548403  
5548605  
5554626  
5556882  
5559805  
5565377  
5565341  
5569624  
5569783  
5570182  
5573012  
5575929  
5576527  
5578163  
5578784

5581256  
5582013  
5583281  
5583427  
5585180  
5589138  
5589838  
5591088  
5593248  
5595438  
5596509  
5801938  
5802985  
5809059  
5809608  
5810511  
5812538  
5815287  
5818485  
5817482  
5828877  
5830218  
5831654  
5833408  
5835437  
5842184  
5842858  
5844395  
5845584  
5847933  
5848635  
5858515  
5860642  
5881385  
5861490  
5863078  
5863972



5670252  
5672807  
5674758  
5677921  
5681130  
5682194  
5684907  
5688081  
5687575  
5689363  
5689622  
5691541  
5694800  
5698083  
5698113  
5703885  
5705902  
5711147  
5714404  
5720884  
5722328  
5723854  
5728374  
5728694  
5730417  
5731163  
5731380  
5731838  
5732172  
5742471  
5744510  
5748634  
5748801  
5747120  
5763122  
5763385  
5754144

5754897  
5757227  
5757320  
5758849  
5760443  
5762090  
5763087  
5766208  
5766747  
5767853  
5771802  
5773308  
5773748  
5774091  
5775176  
5777336  
5778735  
5783130  
5783316  
5783387  
5783886  
5788338  
5796383  
5798766  
5805110  
5807782  
5810966  
5811844  
5811951  
5817550  
5819749  
5821705  
5828491  
5828883  
5832772  
5836054  
5841570

5847480  
5847500  
5851947  
5852572  
5853358  
5857047  
5855185  
5851690  
5870597  
5872028  
5877580  
5880573  
5882496  
5882773  
5883498  
5883591  
5883763  
5883803  
5883895  
5881408  
5883257  
5887751  
5896594  
5904772  
5905748  
5907438  
5907682  
5908896  
5910839  
5911737  
5911868  
5914803  
5918140  
5919128  
5919350  
5923481  
5924335

5926181  
5932185  
5933236  
5938695  
5941132  
5943132  
5943150  
5944687  
5944717  
5945037  
5954937  
5955221  
5958299  
5958383  
5966606  
5980016  
5989848  
5973015  
5975799  
5980713  
5980718  
5985217  
5988188  
5988294  
5988755  
5989281  
5994174  
5994670  
6000243  
6002202  
6006012  
6006175  
6007683  
6010800  
6018888  
6017125  
6017800

6018389  
6022309  
6027679  
6028079  
6033583  
6034438  
6036652  
6038315  
6038854  
6043937  
6046578  
6047013  
6051125  
6051493  
6056079  
6066331  
6058898  
6059813  
6060791  
6065898  
6058780  
6068277  
6068414  
6071428  
6077671  
6078048  
6078358  
6078425  
6082140  
6082239  
6088599  
6087407  
6088635  
6090287  
6099205  
6099283  
6100084

6102917  
6102933  
6103080  
6108288  
6109108  
6110332  
6111332  
6114097  
6115121  
6115128  
6115452  
6119451  
6120857  
6124712  
6125804  
6127582  
6131384  
6131410  
6132974  
6134300  
6134944  
6139716  
6140057  
6142706  
6143688  
6144808  
6146103  
6147497  
6148272  
6149786  
6150080  
6150890  
6153076  
6154119  
6154276  
6158244  
6160934

6162707  
6165355  
6165417  
6167000  
6168737  
6176328  
6175609  
6177794  
6177963  
6178611  
6191515  
6193870  
6198069  
6201960  
6202407  
6203924  
6204189  
6204595  
6205819  
6207957  
6209926  
6210131  
6212215  
6214202  
6217722  
6221726  
6222672  
6223656  
6225635  
6228612  
6230666  
6233470  
6236675  
6240530  
6250230  
6252208  
6260006

6261981  
6262528  
6264880  
6264882  
6268663  
6268353  
6268586  
6268311  
6270972  
6273476  
6278239  
6278764  
6288088  
6288402  
6288685  
6291520  
6296749  
6300755  
6301931  
6303448  
6304584  
6306200  
6306532  
6319379  
6319474  
6331194  
6332890  
6337213  
6338824  
6339020  
6339195  
6339608  
6340403  
6340497  
6340588  
6341067  
6341150



6345053  
6346187  
6346461  
6347106  
6347108  
6348888  
6349477  
6351254  
6351307  
6351982  
6352538  
6353668  
6355146  
6356931  
6358587  
6365365  
6366318  
6370757  
6370784  
6372328  
6377919  
6379325  
6380627  
6381080  
6382025  
6383388  
6384916  
6384990  
6385228  
6385968  
6387278  
6388083  
6388186  
6402617  
6402980  
6406626  
6411389

6411418  
6412377  
6417754  
6418252  
6419404  
6419484  
6420112  
6421390  
6431251  
6431476  
6432650  
6435358  
6436739  
6438151  
6451008  
6452220  
6454711  
6454758  
6454839  
6455751  
6457347  
6466713  
6471822  
6480730  
6484052  
6489178  
6489532  
6489772  
6490489  
6491685  
6493484  
6498078  
6502983  
6503750  
6504286  
6507033  
6514875

8518737  
8518538  
8520034  
8621101  
8521181  
8622407  
8524532  
8528814  
8532798  
8537360  
8538738  
8541918  
8542857  
8543149  
8547848  
8555017  
8598523  
8582404  
8585828  
8590283  
8570848  
8575886  
8578116  
8578458  
8577428  
8586233  
8592878  
8597820  
8800786  
8802473  
8513808  
8817228  
8618132  
8820333  
8520458  
8821040  
8827822

6628387  
6628388  
6631032  
6638238  
6638854  
6638739  
6640040  
6642086  
6646084  
6647285  
6648078  
6648977  
6657180  
6657344  
6660483  
6661558  
6663821  
6666085  
6666935  
6670024  
6673130  
6673825  
6676164  
6677011  
6680486  
6682218  
6682838  
6685812  
6685897  
6688118  
6688187  
6693277  
6693943  
6696578  
6698713  
6700908  
6704331

6704341  
6705126  
6708602  
6708800  
6710828  
6711538  
6712817  
6716328  
6717104  
6723378  
6724782  
6730204  
6733172  
6738000  
6738044  
6738728  
6740084  
6740184  
6740876  
6748503  
6748828  
6750880  
6753038  
6755083  
6758091  
6758358  
6761809  
6761611  
6764187  
6764883  
6774880  
6778803  
6780320  
6783401  
6783843  
6784480  
6787018

6787104  
6790030  
6791337  
6791735  
6792017  
6799466  
6803141  
6804009  
6804045  
6805970  
6806227  
6806299  
6811133  
6811741  
6815105  
6815116  
6818051  
6818854  
6818964  
6821888  
6824910  
6825180  
6829257  
6835562  
6839970  
6844543  
6846686  
6846839  
6847673  
6850920  
6850467  
6850804  
6860940  
6862306  
6864468  
6865738  
6867418

6868823  
6871556  
6872433  
6872455  
6875207  
6875294  
6879479  
6878643  
6879279  
6879729  
6881284  
6887359  
6887441  
6883518  
6883803  
6897557  
6904069  
6905031  
6905985  
6905338  
6911931  
6913998  
6914552  
6914926  
6916453  
6919347  
6920765  
6921603  
6921894  
6922240  
6923167  
6924322  
6925216  
6925345  
6929604  
6929778  
6931046

6933496  
6933530  
6934475  
6936152  
6938049  
6945851  
6947185  
6948341  
6958248  
6960235  
6960403  
6974178  
6977727  
6979048  
6980285  
6988228  
6991983  
6998102  
6999824  
7001106  
7005179  
7008217  
7007035  
7008004  
7013173  
7016037  
7016038  
7018717  
7018833  
7018878  
7021218  
7025323  
7030998  
7030411  
7035479  
7036882  
7036795



7036220  
7040004  
7041481  
7041879  
7043868  
7047681  
7049543  
7054066  
7082604  
7084538  
7084337  
7073845  
7075068  
7078092  
7078638  
7082808  
7083951  
7089177  
7090979  
7092948  
7112846  
7118830  
7120184  
7122281  
7125580  
7134174  
7136219  
7138042  
7145229  
7148221  
7148180  
7148484  
7148636  
7148697  
7150631  
7152070  
7153401

7155076  
7157232  
7152415  
7172888  
7173385  
7178750  
7179405  
7183766  
7188352  
7188731  
7189471  
7181105  
7191802  
7191882  
7193175  
7194019  
7194181  
7211807  
7219588  
7224041  
7224305  
7227983  
7231380  
7236585  
7239388  
7244830  
7244860  
7246742  
7247273  
7252901  
7253387  
7280124  
7280483  
7285286