

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5864626

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
KAIYING LV	11/21/2019
BO SUN	11/28/2019
YONGGANG FANG	11/26/2019
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	ZTE CORPORATION
<b>Street Address:</b>	ZTE PLAZA, KEJI ROAD SOUTH
<b>Internal Address:</b>	HI-TECH INDUSTRIAL PARK, NANSHAN DISTRICT
<b>City:</b>	SHENZHEN, GUANGDONG
<b>State/Country:</b>	CHINA
<b>Postal Code:</b>	518057
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	16370865
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<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>Email:</b>	mbright@perkinscoie.com
<b>Correspondent Name:</b>	VINAY SATHE
<b>Address Line 1:</b>	PERKINS COIE LLP
<b>Address Line 2:</b>	PO BOX 1247
<b>Address Line 4:</b>	SEATTLE, WASHINGTON 98111-1247
<b>ATTORNEY DOCKET NUMBER:</b>	009064-8094.US01
<b>NAME OF SUBMITTER:</b>	MEGHAN BRIGHT
<b>SIGNATURE:</b>	/Meghan Bright/
<b>DATE SIGNED:</b>	12/12/2019
This document serves as an Oath/Declaration (37 CFR 1.63).	
<b>Total Attachments: 9</b>	
source=Executed Assign-Decs (all inventors)#page1.tif	

source=Executed Assign-Decs (all inventors)#page2.tif  
source=Executed Assign-Decs (all inventors)#page3.tif  
source=Executed Assign-Decs (all inventors)#page4.tif  
source=Executed Assign-Decs (all inventors)#page5.tif  
source=Executed Assign-Decs (all inventors)#page6.tif  
source=Executed Assign-Decs (all inventors)#page7.tif  
source=Executed Assign-Decs (all inventors)#page8.tif  
source=Executed Assign-Decs (all inventors)#page9.tif

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

---

In re Patent Application of:  
Kaiying Lv et al.

Application No.: 16/370,865

Confirmation No.: 1051

Filed: March 29, 2019

For: TECHNIQUES OF IMPROVING EDCA  
MECHANISM IN SPATIAL REUSE

---

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION AND ASSIGNMENT BY THE INVENTOR**

I, Kaiying Lv, of Shenzhen, P.R. China, hereby declare that:

I believe I am the sole original inventor or an original joint inventor of a claimed invention in a patent application entitled:

**TECHNIQUES OF IMPROVING EDCA MECHANISM IN SPATIAL REUSE**

the specification of which was filed on March 29, 2019, as Application No. 16/370,865, and which is a bypass continuation of PCT/CN2017/105053, filed September 30, 2017, which further claims the benefit of priority to International Application Nos. PCT/CN2016/101170, filed September 30, 2016, PCT/CN2016/103378, filed October 26, 2016 and PCT/CN2016/000605, filed November 3, 2016.

I believe the following persons are original joint inventors of the above-identified patent application(s):

Bo Sun, of Shenzhen, P.R. China; and  
Yonggang Fang, of Shenzhen, P.R. China.

The above-identified application was made or authorized to be made by me.

I have reviewed and understand the contents of the above-identified patent application including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR §1.56.

I hereby acknowledge that any willful false statement made in the above declaration is punishable under 18 USC §1001 by fine or imprisonment of not more than five (5) years, or both.

#### ASSIGNMENT

I hereby assign to ZTE Corporation, a corporation of P.R. China, having a place of business at ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong 518057, P.R. China, and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in any and all inventions and improvements which are described in an application for United States Patent filed by me, entitled *TECHNIQUES OF IMPROVING EDCA MECHANISM IN SPATIAL REUSE*, filed on March 29, 2019, and assigned U.S. Application Number 16/370,865.

This assignment includes the entire right, title and interest in said application, all legal equivalents thereof in any country, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions and improvements, including, but not limited to, all divisions, continuations, reissues, reexamination certificates, any and all certificates issued in any post-grant proceeding, and extensions of said applications and patents of the United States, foreign patents, utility models, and design registrations, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes, and the right to seek relief and recover all damages, including, but not limited to, a reasonable royalty, by reason of infringement or any other violation of patent or patent application rights. I authorize the Assignee to apply in all countries in my name or in the name of the Assignee for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements.

In addition, I hereby confirm the sale, assignment, and transfer to the Assignee of the entire right, title and interest throughout the world in said inventions and improvements that occurred by operation of an employment agreement between me and the Assignee existing at the time said inventions and improvements were made. Should I have any remaining interest, I hereby sell, assign, and transfer any right, title and interest I may have in said inventions and improvements anywhere in the world to the Assignee.

The foregoing assignments, sale and transfer have been made for good and valuable consideration in accordance with the aforementioned employment agreement.

I hereby represent and covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into that would conflict with the assignment of said inventions and improvements to the Assignee.

I further covenant for myself and my respective heirs, legal representatives and assigns, to assist the Assignee in handling various procedures, tasks and documentation in connection

Inventor : Kaiying Lv et al.  
 Appl. No. : 16/370,865  
 Filed : March 29, 2019  
 Page : 3 of 3

Docket No. 009064-8094.US01

with this assignment, including, but not limited to, providing to the Assignee promptly upon the request of the Assignee all pertinent facts and documents relating to said invention and improvements, and said patents, said legal equivalents or other legal instrument as may be known and accessible to me and testifying as to the same in any interference, litigation, or proceeding relating thereto, and promptly executing and delivering to the Assignee or its legal representative any and all papers, documents, instruments or affidavits in connection with obtaining, maintaining, issuing or enforcing said application, said inventions and improvements, and said patents, said equivalents and other legal instrument which may be necessary or desirable to carry out the purposes thereof.

I hereby authorize and request the Commissioner of Patents and Trademarks to issue one or more patents in the United States for said inventions and improvements to ZTE Corporation as assignee of the entire interest, for the sole use and benefit of Assignee, its successors and assigns.

I am competent to execute the above declaration and assignment. I hereby have duly executed the declaration and assignment below with my name.

Full name of inventor: KAIYING LV

Inventor's signature: Kaiying LV

Date: 2019. 11. 21

Perkins Coie LLP  
 P.O. Box 1247  
 Seattle, Washington 98111-1247  
 Telephone: (858) 720-5700  
 Facsimile: (206) 359-7198

PATENT

REEL: 051265 FRAME: 0616

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Kaiying Lv et al.

Application No.: 16/370,865

Confirmation No.: 1051

Filed: March 29, 2019

For: TECHNIQUES OF IMPROVING EDCA  
MECHANISM IN SPATIAL REUSE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION AND ASSIGNMENT BY THE INVENTOR**

I, Bo Sun, of Shenzhen, P.R. China, hereby declare that:

I believe I am the sole original inventor or an original joint inventor of a claimed invention in a patent application entitled:

**TECHNIQUES OF IMPROVING EDCA MECHANISM IN SPATIAL REUSE**

the specification of which was filed on March 29, 2019, as Application No. 16/370,865, and which is a bypass continuation of PCT/CN2017/105053, filed September 30, 2017, which further claims the benefit of priority to International Application Nos. PCT/CN2016/101170, filed September 30, 2016, PCT/CN2016/103378, filed October 26, 2016 and PCT/CN2016/000605, filed November 3, 2016.

I believe the following persons are original joint inventors of the above-identified patent application(s):

Kaiying Lv, of Shenzhen, P.R. China; and  
Yonggang Fang, of Shenzhen, P.R. China.

The above-identified application was made or authorized to be made by me.

I have reviewed and understand the contents of the above-identified patent application including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR §1.56.

I hereby acknowledge that any willful false statement made in the above declaration is punishable under 18 USC §1001 by fine or imprisonment of not more than five (5) years, or both.

#### ASSIGNMENT

I hereby assign to ZTE Corporation, a corporation of P.R. China, having a place of business at ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong 518057, P.R. China, and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in any and all inventions and improvements which are described in an application for United States Patent filed by me, entitled *TECHNIQUES OF IMPROVING EDCA MECHANISM IN SPATIAL REUSE*, filed on March 29, 2019, and assigned U.S. Application Number 16/370,865.

This assignment includes the entire right, title and interest in said application, all legal equivalents thereof in any country, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions and improvements, including, but not limited to, all divisions, continuations, reissues, reexamination certificates, any and all certificates issued in any post-grant proceeding, and extensions of said applications and patents of the United States, foreign patents, utility models, and design registrations, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes, and the right to seek relief and recover all damages, including, but not limited to, a reasonable royalty, by reason of infringement or any other violation of patent or patent application rights. I authorize the Assignee to apply in all countries in my name or in the name of the Assignee for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements.

In addition, I hereby confirm the sale, assignment, and transfer to the Assignee of the entire right, title and interest throughout the world in said inventions and improvements that occurred by operation of an employment agreement between me and the Assignee existing at the time said inventions and improvements were made. Should I have any remaining interest, I hereby sell, assign, and transfer any right, title and interest I may have in said inventions and improvements anywhere in the world to the Assignee.

The foregoing assignments, sale and transfer have been made for good and valuable consideration in accordance with the aforementioned employment agreement.

I hereby represent and covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into that would conflict with the assignment of said inventions and improvements to the Assignee.

I further covenant for myself and my respective heirs, legal representatives and assigns, to assist the Assignee in handling various procedures, tasks and documentation in connection

Inventor : Kaiying Lv et al.  
Appl. No. : 16/370,865  
Filed : March 29, 2019  
Page : 3 of 3

Docket No. 009064-8094.US01

with this assignment, including, but not limited to, providing to the Assignee promptly upon the request of the Assignee all pertinent facts and documents relating to said invention and improvements, and said patents, said legal equivalents or other legal instrument as may be known and accessible to me and testifying as to the same in any interference, litigation, or proceeding relating thereto, and promptly executing and delivering to the Assignee or its legal representative any and all papers, documents, instruments or affidavits in connection with obtaining, maintaining, issuing or enforcing said application, said inventions and improvements, and said patents, said equivalents and other legal instrument which may be necessary or desirable to carry out the purposes thereof.

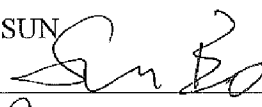
I hereby authorize and request the Commissioner of Patents and Trademarks to issue one or more patents in the United States for said inventions and improvements to ZTE Corporation as assignee of the entire interest, for the sole use and benefit of Assignee, its successors and assigns.

I am competent to execute the above declaration and assignment. I hereby have duly executed the declaration and assignment below with my name.

Full name of inventor: BO SUN

Inventor's signature: \_\_\_\_\_

Date: \_\_\_\_\_

  
2019-11-28

Perkins Coie LLP  
P.O. Box 1247  
Seattle, Washington 98111-1247  
Telephone: (858) 720-5700  
Facsimile: (206) 359-7198



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Kaiying Lv et al.

Application No.: 16/370,865

Confirmation No.: 1051

Filed: March 29, 2019

For: TECHNIQUES OF IMPROVING EDCA  
MECHANISM IN SPATIAL REUSE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION AND ASSIGNMENT BY THE INVENTOR**

I, Yonggang Fang, of Shenzhen, P.R. China, hereby declare that:

I believe I am the sole original inventor or an original joint inventor of a claimed invention in a patent application entitled:

**TECHNIQUES OF IMPROVING EDCA MECHANISM IN SPATIAL REUSE**

the specification of which was filed on March 29, 2019, as Application No. 16/370,865, and which is a bypass continuation of PCT/CN2017/105053, filed September 30, 2017, which further claims the benefit of priority to International Application Nos. PCT/CN2016/101170, filed September 30, 2016, PCT/CN2016/103378, filed October 26, 2016 and PCT/CN2016/000605, filed November 3, 2016.

I believe the following persons are original joint inventors of the above-identified patent application(s):

Kaiying Lv, of Shenzhen, P.R. China; and  
Bo Sun, of Shenzhen, P.R. China.

The above-identified application was made or authorized to be made by me.

I have reviewed and understand the contents of the above-identified patent application including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR §1.56.

I hereby acknowledge that any willful false statement made in the above declaration is punishable under 18 USC §1001 by fine or imprisonment of not more than five (5) years, or both.

#### ASSIGNMENT

I hereby assign to ZTE Corporation, a corporation of P.R. China, having a place of business at ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong 518057, P.R. China, and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in any and all inventions and improvements which are described in an application for United States Patent filed by me, entitled *TECHNIQUES OF IMPROVING EDCA MECHANISM IN SPATIAL REUSE*, filed on March 29, 2019, and assigned U.S. Application Number 16/370,865.

This assignment includes the entire right, title and interest in said application, all legal equivalents thereof in any country, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions and improvements, including, but not limited to, all divisions, continuations, reissues, reexamination certificates, any and all certificates issued in any post-grant proceeding, and extensions of said applications and patents of the United States, foreign patents, utility models, and design registrations, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes, and the right to seek relief and recover all damages, including, but not limited to, a reasonable royalty, by reason of infringement or any other violation of patent or patent application rights. I authorize the Assignee to apply in all countries in my name or in the name of the Assignee for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements.

In addition, I hereby confirm the sale, assignment, and transfer to the Assignee of the entire right, title and interest throughout the world in said inventions and improvements that occurred by operation of an employment agreement between me and the Assignee existing at the time said inventions and improvements were made. Should I have any remaining interest, I hereby sell, assign, and transfer any right, title and interest I may have in said inventions and improvements anywhere in the world to the Assignee.

The foregoing assignments, sale and transfer have been made for good and valuable consideration in accordance with the aforementioned employment agreement.

I hereby represent and covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into that would conflict with the assignment of said inventions and improvements to the Assignee.

I further covenant for myself and my respective heirs, legal representatives and assigns, to assist the Assignee in handling various procedures, tasks and documentation in connection

Inventor : Kaiying Lv et al.  
Appl. No. : 16/370,865  
Filed : March 29, 2019  
Page : 3 of 3

Docket No. 009064-8094.US01

with this assignment, including, but not limited to, providing to the Assignee promptly upon the request of the Assignee all pertinent facts and documents relating to said invention and improvements, and said patents, said legal equivalents or other legal instrument as may be known and accessible to me and testifying as to the same in any interference, litigation, or proceeding relating thereto, and promptly executing and delivering to the Assignee or its legal representative any and all papers, documents, instruments or affidavits in connection with obtaining, maintaining, issuing or enforcing said application, said inventions and improvements, and said patents, said equivalents and other legal instrument which may be necessary or desirable to carry out the purposes thereof.

I hereby authorize and request the Commissioner of Patents and Trademarks to issue one or more patents in the United States for said inventions and improvements to ZTE Corporation as assignee of the entire interest, for the sole use and benefit of Assignee, its successors and assigns.

I am competent to execute the above declaration and assignment. I hereby have duly executed the declaration and assignment below with my name.

Full name of inventor: YONGGANG FANG

Inventor's signature: Y C Fang

Date: 11/26/2019

Perkins Coie LLP  
P.O. Box 1247  
Seattle, Washington 98111-1247  
Telephone: (858) 720-5700  
Facsimile: (206) 359-7198