



**PARTIES**

2. Professor Neumark is a resident of the State of New York, with her principal residence at 153 Old Colony Road, Hartsdale, New York.

3. Defendant Lumileds is incorporated under the laws of the State of Delaware with its principal place of business located at 370 West Trimble Road, San Jose, California.

4. Defendant Future Inc., is a corporation organized and existing under the laws of Canada, with its principal place of business located at 237 Hymus Boulevard, Pointe-Claire, Quebec, Canada.

5. Defendant Future Corp. is a subsidiary of defendant Future Inc. Future Corp. is incorporated under the laws of the State of Massachusetts, with its principal place of business at 41 Main Street, Bolton, Massachusetts.

**JURISDICTION AND VENUE**

6. This Court has subject matter jurisdiction over the claims in this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

7. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b), (d) and 1400(b).

8. Upon information and belief, defendant Lumileds is currently doing business in the United States, including this judicial district, by undertaking systematic and continuous activities toward using or offering to sell, or causing others to undertake systematic and continuous activities toward making, using or offering to sell, or causing others to make, use, offer to sell or sell numerous products including, but not limited to, Light Emitting Diodes (“LEDs”) and Laser Diodes (“LDs”). Defendant Lumileds is also doing business in the United States, including this judicial district, through defendant Lumileds’s web site, available to

Internet users in this judicial district. Upon information and belief, defendant Lumileds is currently doing business in the United States, including this judicial district, through its participation in trade shows to engage in the sale, development and marketing of LEDs and LDs. Upon information and belief, defendant Lumileds is currently doing business in the United States, including this judicial district through Future Inc. and/or Future Corp., Lumileds distribution partners, whereby defendant Lumileds has been engaged in, and will continue to be engaged in the sales, development and marketing of LEDs and LDs. Defendant Lumileds derives substantial revenue from interstate and international commerce, including substantial revenue through one or more of its subsidiaries and/or distributors from goods used or consumed or services rendered in the State of New York and this judicial district. Defendant Lumileds has committed, and unless enjoined will continue to commit, tortious acts without the State of New York that defendant Lumileds expects or should reasonably expect to have consequences in the State of New York.

9. Upon information and belief, defendants Future Inc. and Future Corp. are currently doing business throughout the United States, including this judicial district, by undertaking systematic and continuous activities toward using or offering to sell, or causing others to undertake systematic and continuous activities toward making, using or offering to sell, or causing others to make, use, offer to sell or sell, among other products, LEDs and LDs. Defendants Future Inc. and Future Corp. are currently doing business throughout the United States, including this judicial district, by operating branch offices throughout the United States, including the State of New York. Defendants Future Inc. and Future Corp. derive substantial revenue from interstate and international commerce, including substantial revenue through one or more of its subsidiaries and/or distributors from goods used or consumed or services rendered

in the State of New York and this judicial district. Defendants Future Inc. and Future Corp. have committed, and unless enjoined will continue to commit, tortious acts without the State of New York that defendants Future Inc. and Future Corp. expect or should reasonably expect to have consequences in the State of New York.

### **FACTUAL BACKGROUND**

10. Professor Neumark is Howe Professor Emerita of Materials Science and Engineering, Professor Emerita of Applied Physics and Applied Mathematics and a Special Research Scientist, Columbia University, New York, New York. She was the first woman to hold a named Chair in the Faculty of Engineering and Applied Science at Columbia University.

11. Professor Neumark's status at Columbia recognizes a lifetime of extraordinary intellectual and academic achievement including: Bachelors of Arts degree in chemistry, *summa cum laude*, in January 1948 from Barnard College, Columbia University, and membership in *Phi Beta Kappa*; Rice Fellowship, Barnard College (1948) (the only Fellowship awarded to the graduating class for graduate study in sciences); Dana Fellowship, Radcliffe College, Harvard University (1949); Master's Degree in chemistry, Radcliffe College (1949); Ph.D in chemistry, Columbia University (1951); Anderson postdoctoral fellowship, American Association of University Women (1951); Visiting Professor of Materials Science, Department of Mining, Metallurgical and Mineral Engineering, School of Engineering and Applied Science, Columbia University (1982); Adjunct Professor of Materials Science, Department of Mining, Metallurgical and Mineral Engineering, School of Engineering and Applied Science, Columbia University (1983); Professor of Materials Science, Department of Mining, Metallurgical and Mineral Engineering, School of Engineering and Applied Science, Columbia University (1985); and

Professor of Applied Physics, Department of Applied Physics and Applied Mathematics, School of Engineering and Applied Science, Columbia University (1998).

12. Professor Neumark was elected as a Fellow of the American Physical Society in 1982 and is also listed as a Notable Woman Physicist on an archival website of the American Physical Society. She is also listed in Who's Who in America.

13. In her career spanning approximately 50 years, Professor Neumark's scientific research in both academia and industry has focused on the field of luminescence with primary emphasis on the application of semiconductor diodes to lighting.

### **LIGHT EMITTING AND LASER DIODES**

14. An LED, or light emitting diode, is a semiconductor diode that converts electricity into light. Semiconductors are materials with resistivities in the range between metals and insulators, in which the electrical charge carrier concentration increases with increasing temperature over some temperature range. Semiconductors are useful for electronic purposes because they have the ability to carry an electric current by electron propagation, known as n-type, or hole propagation, known as p-type.

15. Unlike traditional lighting sources, such as incandescent light bulbs, LEDs do not have a filament that invariably burns out over a short time. LEDs are more efficient than traditional incandescent lighting sources, are extremely rugged and can operate without interruption for long periods of time, substantially exceeding the life of incandescent lights.

16. A laser diode ("LD") is a semiconductor device that produces coherent radiation (in which the waves are all at the same frequency and phase).

17. Despite the recognized potential of LEDs and LDs, their commercial use was initially limited because it was not commercially feasible to produce LEDs and LDs in green or other high spectral ranges.

18. LEDs have increasingly gained general acceptance as a superior lighting source for a large number of products. LEDs are commonly used, among other things, to illuminate the instrument panels of airplanes and motor vehicles, provide the backlighting of cellular telephones, and in traffic lights and large billboards.

19. LDs have gained wide acceptance in a wide variety of consumer products such as Compact Disc and Digital Video Disc Players and also have recognized military applications.

20. Billions of dollars in revenues annually are generated by sales of LEDs and LDs in the United States and abroad, and such sales are expected to increase exponentially as more and varying uses of LED and LD technology are developed.

#### **THE PATENTS AT-ISSUE**

21. On February 27, 1990, U.S. Patent No. 4,904,618 (the “‘618 Patent”) entitled “Process for Doping Crystals of Wide Band Gap Semiconductors” was duly and legally issued to Professor Neumark.

22. On October 12, 1993, U.S. Patent No. 5,252,499 (the “‘499 Patent”) entitled “Wide Band-Gap Semiconductors Having Low Bipolar Resistivity and Method of Formation” was duly and legally issued to Professor Neumark.

23. The processes described in the ‘618 Patent and ‘499 Patent make it commercially feasible to produce LEDs and LDs in green or other high spectral ranges.

#### **COUNT ONE – ‘618 Patent (LUMILEDS)**

24. Professor Neumark incorporates by reference paragraphs 1 through 23 above.

25. Defendant Lumileds, by engaging in the unauthorized manufacture, importation, use, sale and/or offer for sale of LEDs and/or LDs created using the processes described and claimed in the '618 Patent, has committed acts of direct, contributory and/or inducement of infringement of claims of the '618 Patent.

26. Upon information and belief, Defendant Lumileds knew of the '618 Patent and/or should have known about this patent in performing its due diligence prior to initiating and expanding its infringing activities.

27. Defendant Lumileds's infringement of one or more of the claims of '618 Patent has been willful and deliberate, entitling Professor Neumark to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

28. Defendant Lumileds's infringement of Professor Neumark's exclusive rights under the '618 Patent, unless enjoined by this Court, will continue to harm Professor Neumark's rights under those patents, causing irreparable harm for which there is no adequate remedy at law.

29. Professor Neumark has and will continue to suffer damages as a result of defendant Lumileds infringing activities.

**COUNT TWO – '499 Patent  
(LUMILEDS)**

30. Professor Neumark incorporates by reference paragraphs 1 through 23 above.

31. Defendant Lumileds, by engaging in the unauthorized manufacture, importation, use, sale and/or offer for sale of LEDs and/or LDs created using the processes described and claimed in the '499 Patent, has committed acts of direct, contributory and/or inducement of infringement of claims of the '499 Patent.

32. Upon information and belief, Defendant Lumileds knew of the '499 Patent and/or should have known about this patent in performing its due diligence prior to initiating and expanding its infringing activities.

33. Defendant Lumileds's infringement of one or more of the claims of '499 Patent has been willful and deliberate, entitling Professor Neumark to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

34. Defendants Lumileds' infringement of Professor Neumark's exclusive rights under the '499 Patent, unless enjoined by this Court, will continue to harm Professor Neumark's rights under those patents, causing irreparable harm for which there is no adequate remedy at law.

35. Professor Neumark has and will continue to suffer damages as a result of defendant Lumileds' infringing activities.

**COUNT THREE – '618 Patent  
(FUTURE INC. AND FUTURE CORP.)**

36. Professor Neumark incorporates by reference paragraphs 1 through 29 above.

37. Defendants Future Inc. and Future Corp. import into the United States or offer to sell, sell, or use within the United States LEDs and/or LDs manufactured by Lumileds created using the processes described and claimed in the '618 Patent.

38. Upon information and belief, Defendants Future Inc. and Future Corp. knew of the '618 Patent and/or should have known about this patent in performing its due diligence prior to initiating and expanding its infringing activities.

39. Defendant Future Inc.'s and Future Corp.'s infringement of one or more of the claims in the '618 Patent have been willful and deliberate, entitling Professor Neumark to



increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

40. Defendant Future Inc.'s and Future Corp.'s infringement of Professor Neumark's exclusive rights under the '618 Patent, unless enjoined by this Court, will continue to harm Professor Neumark's rights under this patent, causing irreparable harm for which there is no adequate remedy at law.

41. Professor Neumark has and will continue to suffer damages as a result of defendants Future Inc.'s and Future Corp.'s infringing activities.

**COUNT FOUR– '499 Patent  
(FUTURE INC. AND FUTURE CORP.)**

42. Professor Neumark incorporates by reference paragraphs 1 through 23 and 30 through 35 above.

43. Defendants Future Inc. and Future Corp. imports into the United States or offer to sell, sell, or use within the United States LEDs and/or LDs manufactured by Lumileds containing semiconductors created using the processes described and claimed in the '499 Patent.

44. Upon information and belief, Defendants Future Inc. and Future Corp. knew of the '499 Patent and/or should have known about this patent in performing their due diligence prior to initiating and expanding their infringing activities.

45. Defendants Future Inc.'s and Future Corp.'s infringement of one or more of the claims in the '499 Patent has been willful and deliberate, entitling Professor Neumark to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

46. Defendants Future Inc.'s and Future Corp.'s infringement of Professor Neumark's exclusive rights under the '499 Patent, unless enjoined by this Court, will continue to harm

Professor Neumark's rights under this patent, causing irreparable harm for which there is no adequate remedy at law.

47. Professor Neumark has and will continue to suffer damages as a result of defendants Future Inc.'s and Future Corp.'s infringing activities.

**PRAYER FOR RELIEF**

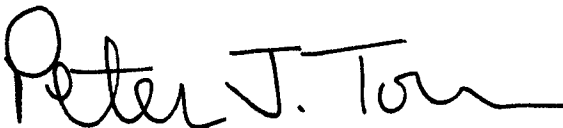
WHEREFORE, Plaintiff respectfully requests that this Court:

- A. award damages sufficient to compensate Plaintiff for infringement of the '499 and '618 Patents, but in no event less than a reasonable royalty, together with interest and costs;
- B. issue a permanent injunction enjoining and restraining defendants Lumileds, Future Inc., and Future Corp., their officers, agents, servants, employees, and attorneys, and all persons acting from, with, by, through, or under them, or any of them, from infringing one or more of the claims in either the '499 or '618 Patents;
- C. enter an order declaring this to be an exceptional case pursuant to 35 U.S.C. §§ 284 and 285 and awarding to Plaintiff increased damages and attorneys' fees and costs; and
- D. grant Plaintiff such other and further relief as this Court deems just and proper.

Dated: June 24, 2005

Respectfully submitted,

SIDLEY AUSTIN BROWN & WOOD LLP

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