



MOSES™  
TECHNOLOGY

2.0

Surgical Excellence, Redefined

Introducing:

MOSES™  
TECHNOLOGY 2.0


Making the best **even better**

➤ **Significant Economic savings**<sup>9,23</sup>

➤ **Increased Efficiency**<sup>1,9</sup>

➤ **Higher Precision**<sup>1,9</sup>

➤ **Optimal Energy Delivery**<sup>1,9</sup>



The second part of the pulse is then emitted through the initial bubble, delivering an optimized laser pulse to the target.<sup>1</sup>

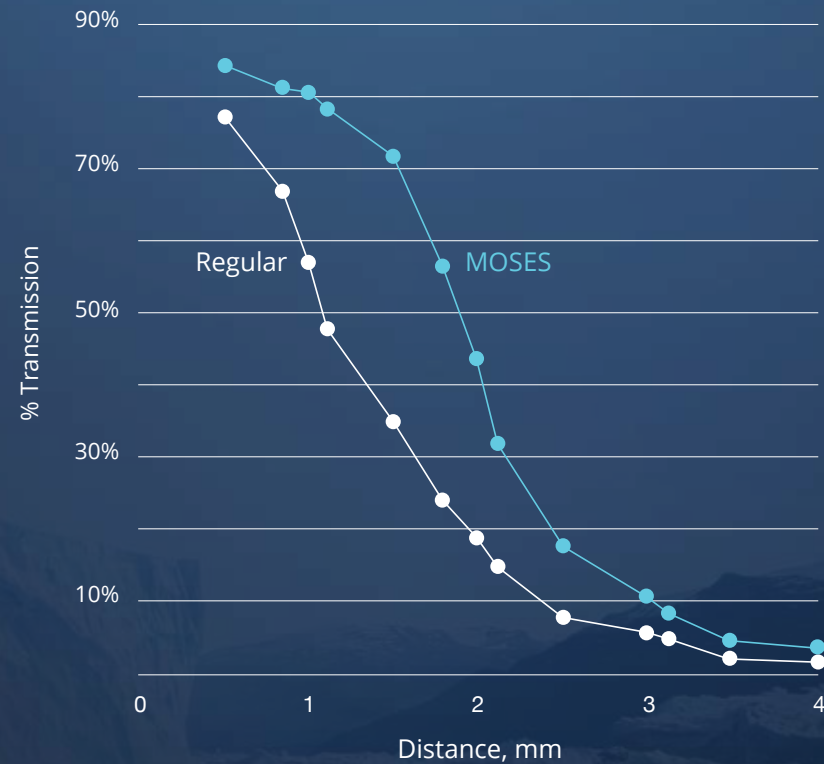
The initial controlled laser pulse separates the water, creating a pathway for a second laser sequence

# MOSES 2.0 Laser Lithotripsy

Continuous innovation

Be it a kidney, ureteral or bladder stone, soft or hard - MOSES 2.0 provides you with the speed and power you need for both ureteroscopic and percutaneous stone treatments<sup>1</sup>

Efficient energy transmission for each working distance



Bench test, a representative case<sup>2,3</sup>

# Lithotripsy Performance, Unleashed

Embrace the Best-In-Class Combination of the MOSES 2.0 Laser and Fibers



**20%** **FASTER PROCEDURES**

As shown in a randomized clinical trial, the MOSES Technology reduces procedure time by 20%, making your treatments faster and more efficient.<sup>1</sup>



**33%** **MORE EFFICIENT FRAGMENTATION**

MOSES high precision and optimized impact on the target stone makes the most of every shot, leading to a greater ablation rate compared to regular pulses.<sup>1</sup>



**50%** **LESS RETROPULSION**

The MOSES Technology has taken retropulsion reduction to the next level, decreasing retropulsion levels by 50%.<sup>1</sup>



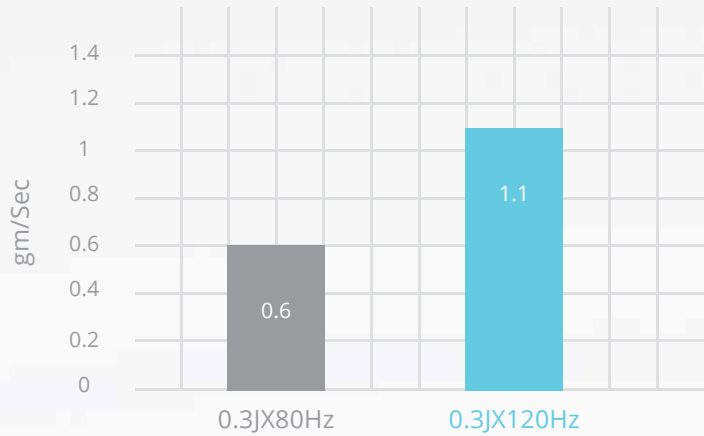
**120<sub>Hz</sub>** **END-TO-END EXCELLENCE**

From ultra-speed stone dusting, through unprecedented pop-corning settings - MOSES 2.0 offers the speed and energy you need - when you need it.<sup>3</sup>

# MOSES 2.0

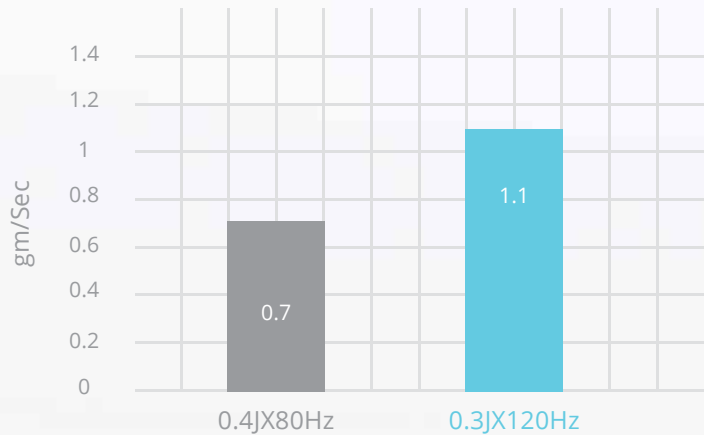
## Increased efficiencies

85% greater stone ablation at 120Hz



Bench test, a representative case<sup>3</sup>

53% greater stone ablation at similar power



Bench test, a representative case<sup>3</sup>

Focus on what matters in your percutaneous approach

## Standard, Mini and UltraMini PCNL

Leverage MOSES' advantages to create smaller stone particles, allowing you to miniaturize your percutaneous access.<sup>4</sup>



## PCNL suction handpiece

Allows for simultaneous lithotripsy and aspiration of stone fragments for greater control in Standard PCNL.<sup>5,6,7</sup>



## LEAVE NO STONE BEHIND

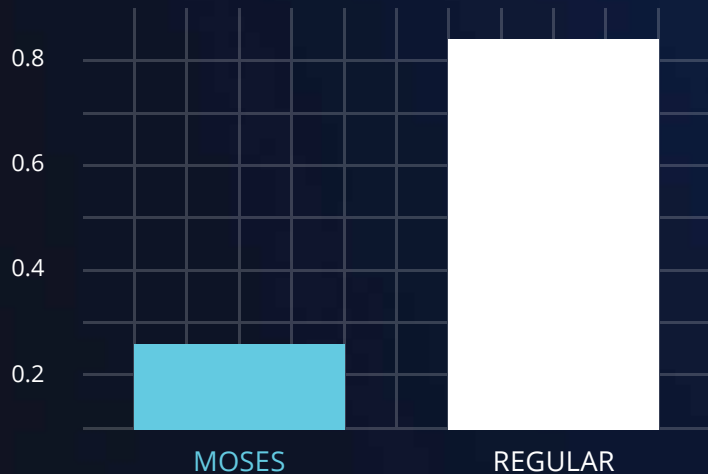
MOSES 200 D/F/L flexible fiber is designed to minimize scope deflection loss<sup>1,8</sup>, enabling you to reach difficult-to-access stone locations.



## SMOOTH PROCESS MORE CONFIDENCE

Advanced ball-shaped tip enables a smooth initial insertion of the MOSES 200 D/F/L fiber, through a flexible scope, designed to minimize potential scope damage.

### Fiber Tip Degradation (mm)

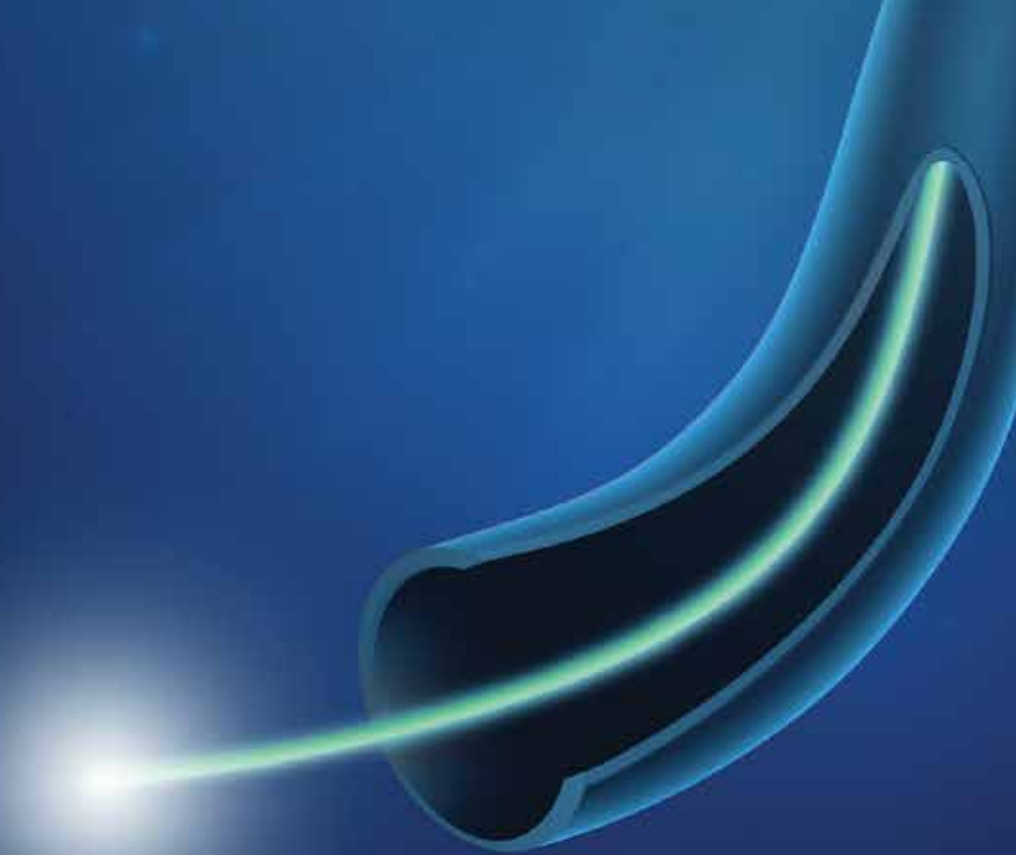


Bench test, a representative case<sup>3</sup>



## IMPROVED FIBER DURABILITY

The unique MOSES pulse, combined with best-in-class surgical fibers, results in minimal fiber burnback and improved control.<sup>3</sup>



# MOSES 2.0 BPH

## Shifting paradigms

Cementing HoLEP as the clinically superior treatment for BPH, the MOSES technology enables same day Catheter Free discharge, and faster procedures.<sup>9,10,11</sup>

The MOSES BPH bubble is a unique optimization for BPH procedures, improving capsule-adenoma separation and blood vessel coagulation.<sup>9</sup>

 **90+**%  
Same Day  
Discharge<sup>9</sup>

 **40**%  
Faster  
Hemostasis<sup>9</sup>

 **15**%  
Faster  
Enucleation<sup>9</sup>

# MOSES 2.0 for HoLEP

Make an impact that lasts



## Same Day Discharge, Catheter Free

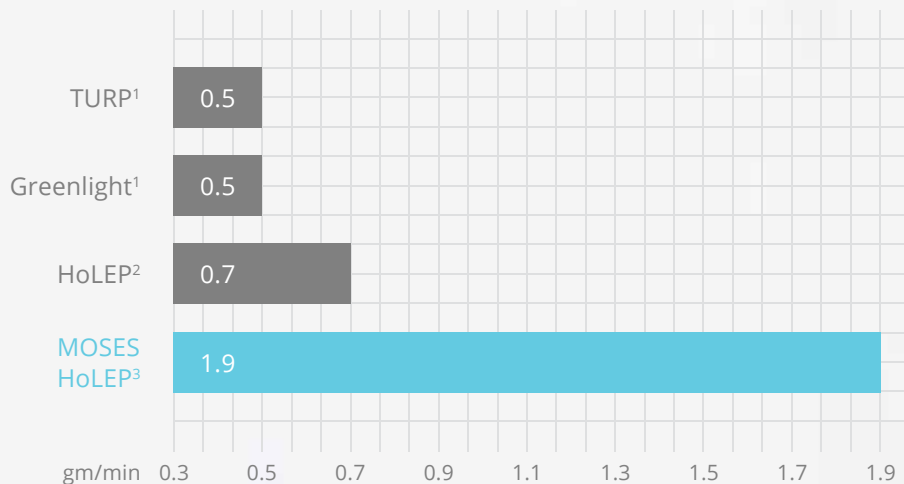
With more efficient procedures and minimal bleeding – MOSES BPH results in over 90% of patients being discharged on the same day, and with better bladder voiding outcomes.<sup>9</sup>



## Faster Procedures

With 15% faster enucleation and 40% faster hemostasis – MOSES BPH simultaneous cutting and cauterizing significantly reduce surgical time and anesthesia use.<sup>9</sup>

Enucleation efficiency <sup>9,12,13</sup>





## Faster Learning Curve

Become adept at the HoLEP technique after only 20-30 supervised procedures.<sup>14</sup>

With less fiber burnback and improvements in hemostasis - MOSES enables a tapered learning curve by providing better vision clarity and control during the procedure.<sup>9</sup>

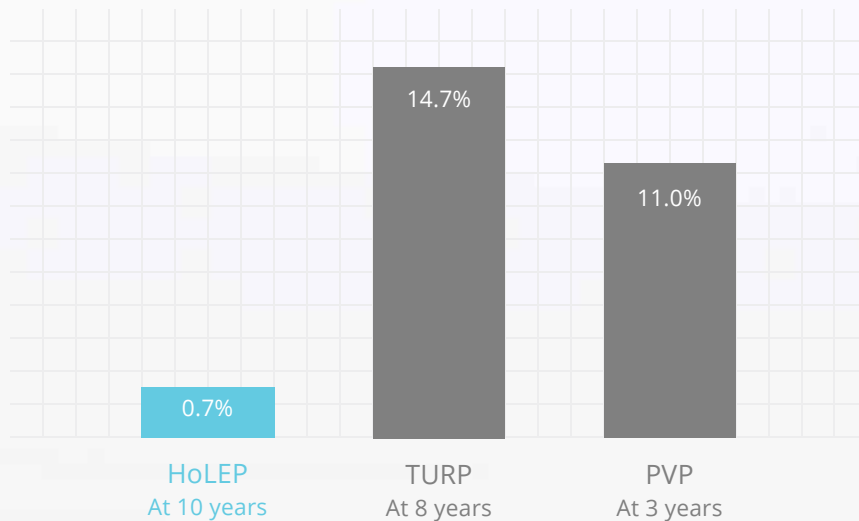


*With Moses 2.0 the learner can focus on mastering HoLEP without distractions. Minimal fiber burnback and movement and improved hemostasis decreasing surgery interruptions and allowing for more precise laser control*

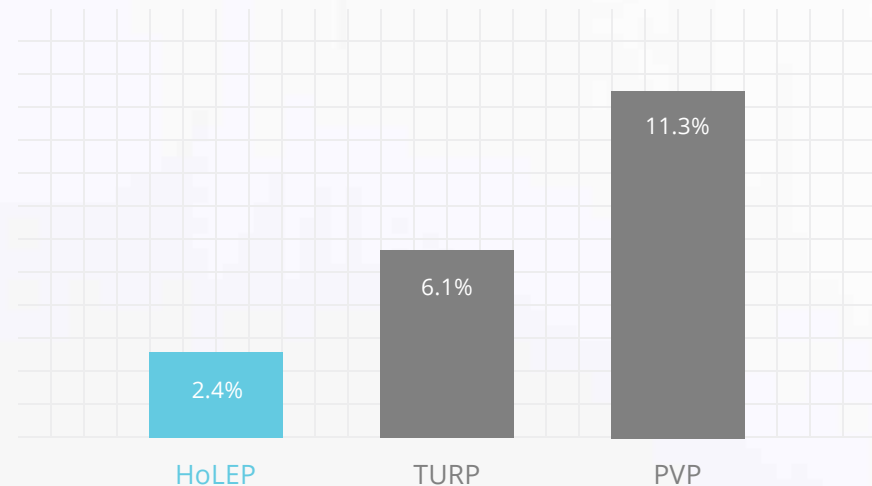


**Dr. Amy E. Krambeck**  
Professor of Urology at Indiana  
University School of Medicine

## Lower Reoperation Rates<sup>15, 16, 17</sup>



## Lower Complication Rates<sup>15, 18</sup>



# A powerful MOSES solution for accelerated vaporization<sup>3</sup>



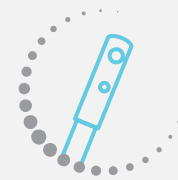
**Higher**  
Vaporization Rate  
and Efficiency

Up to 2.2x faster vaporization rate compared to regular pulse.<sup>3,19</sup>



**Improved**  
Coagulation

Control hemostasis and keep bleeding minimal with the advanced pulse reshaping and customized dual pedal.<sup>20,21</sup>



**Enhanced**  
Fiber Control

Xpeeda™ side firing fiber is designed to deliver increased energy transmission<sup>3</sup> in full contact without causing deep tissue charring.<sup>22</sup>

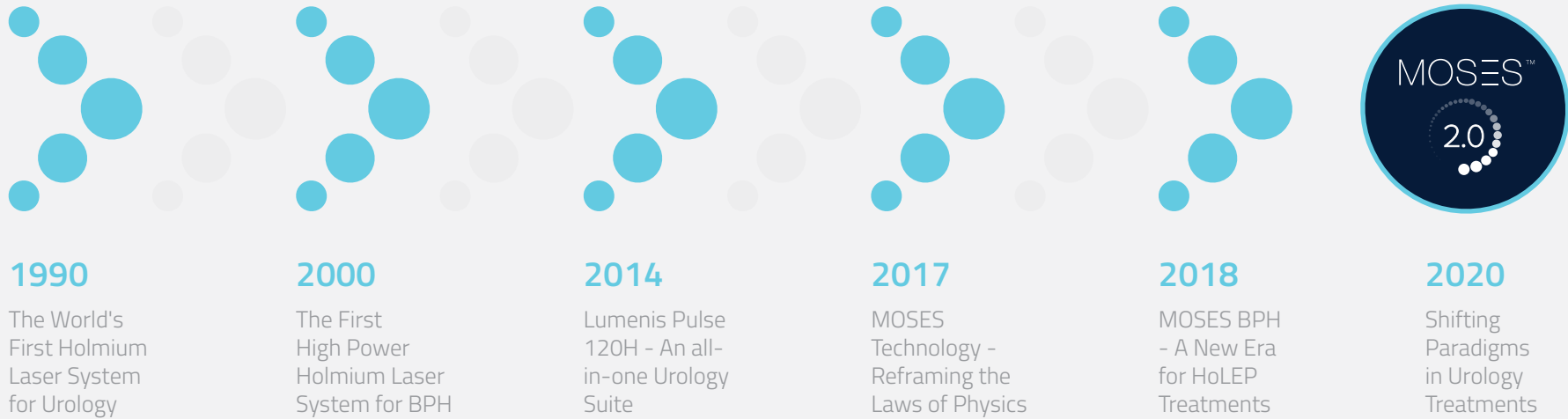


*I have noticed a significant difference when working with MOSES for vaporization. The vaporization rate was better and I found a smoother vaporization plane. I am looking forward to further exploring the potential benefits of the MOSES technology in BPH treatments.*

**Dr. Fernando Gómez Sancha,**  
Clinica Centro Madrid, Spain



# Heritage of Innovation



## Impact with Every Interaction



### Continuous Innovation

From the first Holmium Laser for Urology to the patent-protected MOSES Technology – Lumenis is leading Urology innovation



### Proven Versatility

Backed by hundreds of clinical papers – the Lumenis Urology Platforms offer 360° solution for both lithotripsy and soft tissue applications



### Elevating Life

Continuously striving to provide better technology for better patient care – making an impact on hundreds of thousands of patients every single day





### Peace of Mind

With thousands of global installations and hundreds of supporting clinical publications – Lumenis is your trusted global partner

# Technical Specifications

## MOSES PULSE 120H

Moses Technology	Lithotripsy & BPH 
Maximum Optical Power	120 W
Wavelength	Holmium (2.1 µm)
Repetition Rate	5-120Hz 
Pulse Energy	0.2-6 J
Integrated Suction	Yes
Case Saver Mode	Yes
Dual Pedal Footswitch	Yes
Pulse Width	Adjustable (Short, Medium, Long)
Fibers	Lumenis reusable and single use fibers

Smart Identification System (SIS)	Yes
Aiming Beam	Green
Fiber Support Arm	Optional
Weight	260 kg
Dimensions [W / L / H]	47 x 116 x 105 cm
Voice Confirmation Indicating System's Operational Status	Yes
Electrical	200-240 VAC, <46 Amp, 50/60 Hz
Warranty	One year parts and labor



### Risk Information:

The use of Moses technology in urology, enabled in the Lumenis Pulse 120H system, is contraindicated for patients who are unable to receive endoscopic treatments or are intolerant to prolonged anesthesia, as well as for resection or excision of large vascularized organs. Holmium lasers are intended solely for use by physicians trained in the use of the Ho:YAG (2.1 µm) wavelength. Incorrect treatment settings can cause serious tissue damage. The laser should be used only on tissues that are fully observable. See the system user manual for a complete list of contraindications and risks.

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## References:

1. Ibrahim A, Elhilali MM, Fahmy N, Carrier S, Andonian S. Double-Blinded Prospective Randomized Clinical Trial Comparing Regular and Moses Modes of Holmium Laser Lithotripsy. *J Endourology*. 2020;34(5):624-628. doi:10.1089/end.2019.0695
2. Elhilali et al. Moses technology in a stone simulator. *Can Urol Assoc J*. 2018 Apr;12(4):127-130. doi: 10.5489/cuaj.4797. Epub 2017 Dec 22
3. Bench test results may not necessarily be indicative of clinical performance.
4. Ghani et al. Holmium Laser Lithotripsy in the New Stone Age: Dust or Bust? *Front. Surg.*, 29 September 2017
5. Roberts et al. Dusting utilizing suction technique (DUST) for percutaneous nephrolithotomy: Use of a dedicated laser handpiece to treat a staghorn stone. Poster presentation at EAU 2017
6. Lingeman et al. A Usability Comparison of Laser Suction Handpieces for Percutaneous Nephrolithotomy. *Journal of Endourology* (November 2016)
7. Sofer et al. Laser suction handpiece for percutaneous nephrolithotomy (PCNL): a clinical comparison to other lithotripters. Poster presentation at IUA 2018
8. Ghani et al. Ureteroscopic holmium laser lithotripsy using the Moses technology. Video presentation at WCE 2018
9. Krambeck AE, Large T. Comparative Study of Holmium Laser Enucleation of the Prostate With MOSES Enabled Pulsed Laser Modulation. *Urology*. February 2020. doi.org/10.1016/j.urology.2019.11.029
10. Krambeck et al. Trends and Perioperative Outcomes across Major BPH Procedures from the ACS-NSQIP 2011-2015. *Journal of Endourology* (July 2018)
11. Young et al. Assessing the learning curve of Holmium Laser Enucleation of Prostate (HoLEP). A systematic review. (*Urology* 2018)
12. Bachman et al. The GOLIATH study. *EUR Urol* 2014 May ; 65: 931
13. Humphreys MR, Miller NL et al. *J Urol*. 2008 Dec; 180: 2431
14. El-Hakim A, Elhilali MM., Holmium Laser Enucleation of the Prostate Can Be Taught: The First Learning Experience. *BJU Int*. 2002 Dec;90(9):863-9. doi: 10.1046/j.1464-410x.2002.03071
15. Elmansy HM, Kotb A, Elhilali MM. Holmium laser enucleation of the prostate: longterm durability of clinical outcomes and complication rates during 10 years of followup. *J Urol*. 2011;186(5):1972-6.
16. Madersbacher S, Lackner J, Broßner C, et al. Reoperation, myocardial infarction and mortality after transurethral and open prostatectomy: a nation-wide, long-term analysis of 23,123 cases. *Eur Urol* 2005;47:499-504.
17. A. Al-Ansari, N. Younes, V.P. Sampige, K. Al-Rumaihi, A. Ghafouri, T. Gul, et al. GreenLight HPS 120-W laser vaporization versus transurethral resection of the prostate for treatment of benign prostatic hyperplasia: a randomized clinical trial with midterm follow-up *Eur Urol*, 58 (2010), pp.349-355
18. Ahyai SA, Gillig P, Kaplan SA, et al. Meta-analysis of Functional Outcomes and Complications Following Transurethral Procedures for Lower Urinary Tract Symptoms Resulting from Benign Prostatic Enlargement. *Eur Urol*. 2010; 58 : 384
19. Beaghtler M, Leo M, Gass J, March J, Sandoval S, et al. (2017) Initial Experience with New High Powered 120 W Holmium for Vaporization of the Prostate. *Urol Nephrol Open Access J* 4(2): 00119. DOI: 10.15406/unoaj.2017.04.00119
20. Elmansy et al. Evaluation of the New Holmium Laser Xpeda™ Side-firing Fiber versus GreenLight XPS 180W Vapoenucleation of the Prostate for Benign Prostatic Obstruction: An Early Clinical Experience. WCE 2019. DOI: 10.1089/end.2019.29064.
21. Yehudit Kraizer, Shadie Badaan, Moshe Elazar, Haim Epshtein, Uri Shpolansky: Perfused bladder model for simulation of hemostasis control using holmium laser. Poster presentation at WCE 2014
22. I. Colon, I. Grunberger et al., Transurethral Holmium Laser Vaporization of the Prostate (HoLVP): What to Expect on Initial Experience. Poster presentation at WCE 2016
23. Baldwin et al. Comparison of Conventional 30, 120 Watt, and 120 Watt MOSES Laser in a Benchtop Cystolitholapaxy Model, WCE2019

Moses™ Technology US patent number - 9895196 B2

