What is claimed is:

1. A device for mapping and ablating ~~the~~ renal nerves distributed on ~~the~~ renal artery, comprising a guide catheter, a mapping-ablation catheter, a handle and a connector, wherein:

~~said guide catheter has at least one lumen and a distal end with adjustable curvature;~~

said guide catheter comprises at least one lumen, a distal end, and a mechanism for controlling its curvature from the handle, said mechanism comprises a first traction wire having one end connected to the tip of said guide catheter and the other end connected to a controlling component at said handle, wherein pulling said first traction wire by the controlling component will cause the tip of the guide catheter to bend;

said mapping-ablation catheter is housed in one of the lumens of the guide catheter and has a distal end that comprises one or more electrodes and one or more detecting devices, ~~wherein~~ said electrodes comprise electrodes for delivering electrical energy, radio frequency energy, laser energy, ~~,~~high intensity focused ultrasound, or for carrying out cryoablation, wherein at least one of said electrodes is larger than the lumen of said guide catheter and fits neatly on an open end of the guide catheter to form a sealing mechanism between the tip of the mapping-ablation catheter and the guide catheter to control fluid entry or exit;

said distal end of the mapping-ablation catheter ~~is curved and~~ can be extended out of or retracted into the guide catheter and is rotatable along the central axis of ~~the~~an open end of the guide catheter~~;~~, wherein ~~the curvature of~~ the distal end of said mapping-ablation catheter has a fixed curvature that is spontaneously resumed when extended out of the guide catheter, said curvature is maintained~~:~~ by using either (i) a second traction wire, one end of ~~the traction wire~~which is~~–~~ fixed to the distal end of the mapping-ablation catheter while the other end is fixed to a spring inside the handle, wherein when the distal end of the mapping-ablation catheter is retracted into the guide catheter, the distal end is confined and ~~stretches the traction wire to compress~~ the spring is compressed, wherein when the distal end of the mapping-ablation catheter is extended out of the guide catheter, its distal end is no longer confined and the spring restores naturally and pulls the second traction wire to cause the bending of the distal end of the mapping-ablation catheter; or

~~by using~~(ii) Ni-Ti shape memory alloy with a preformed shape so that the distal end can maintain the preformed curvature after assembled into the catheter~~.~~;

said handle connects the guide catheter and mapping-ablation catheter and comprises one or more controlling components, said controlling components are for controlling

the ~~movement~~bending of the guide catheter and the extending or retracting of the mapping-ablation catheter from the guide catheter; and

said connector is designed to supply energy to the ~~electrode.~~ one or more electrodes.

2. The device of claim 1, wherein said handle further comprises a fluid-exchange conduit connected to the guide catheter for controlling fluid entering or leaving the

guide catheter.

3. The device of claim 1, wherein said detecting devices comprise temperature detecting device and resistance detecting device.

~~4. The device of claim 1, wherein a sealing mechanism is formed between the mapping-ablation catheter and guide catheter to control fluid entry or exit.~~

~~5~~4. The device of claim 1, wherein the material at the distal end of said guide catheter is the softest, the material at the middle part of the guide catheter has an intermediate hardness and the material at the proximal end of the guide catheter is the hardest with the hardness of the materials distributed in the range 90A to 80D in the Shore hardness scale.

~~6~~5. The device of any one of claims 1 to ~~5~~4, wherein said controlling components comprise a control knob that causes the distal end of the guide catheter to bend.

~~7~~6. The device of any one of claims 1 to ~~5~~4, wherein said controlling components comprise a control knob that causes the distal end of the mapping-ablation catheter to extend out of or withdraw into the guide catheter.

~~8~~7. The device of any one of claims 1 to ~~5~~4, wherein said controlling components comprise a control knob that causes the distal end of the mapping-ablation catheter to rotate.

~~9~~8. The device of any one of claims 1 to ~~5~~4, wherein said controlling components comprise a control knob that causes the distal end of the mapping-ablation to extend out of or withdraw into the guide catheter, and causes the distal end of the mapping-ablation catheter to rotate.