

Title (en)  
SYSTEM AND METHOD FOR NONINVASIVE HEMODYNAMIC MEASUREMENTS IN HEMODIALYSIS SHUNTS

Title (de)  
SYSTEM UND VERFAHREN FÜR NICHTINVASIVE BLUTDYNAMIKMESSUNGEN IN HÄMODIALYSEWEICHEN

Title (fr)  
SYSTEME ET PROCEDE POUR MESURES HEMODYNAMIQUES NON INVASIVES DANS DES PONTAGES EN HEMODIALYSE

Publication  
**EP 0944362 A4 20011121 (EN)**

Application  
**EP 97913824 A 19971022**

Priority  
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• US 2958796 P 19961023

Abstract (en)  
[origin: WO9817193A1] Access recirculation in a shunt is determined quantitatively by a method in which a standard solution, such as saline, is injected into a patient's (200) bloodstream upstream of the shunt. At a point in the access line, a photometric measurement is conducted of the change in hematocrit (delta H) with respect to time. Electronic circuitry (150) receives signals from the detector (100), compares the integrated area of delta H with respect to time of the standard solution initially flowing through the access of the recirculated solution, and provides display of recirculation (152).

IPC 1-7  
**A61B 19/00**; **A61M 1/36**

IPC 8 full level  
**A61B 5/145** (2006.01); **A61B 5/1459** (2006.01); **A61B 5/1495** (2006.01); **A61B 19/00** (2006.01); **A61M 1/14** (2006.01); **A61M 1/36** (2006.01); **A61M 1/16** (2006.01)

CPC (source: EP KR US)  
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Citation (search report)  
• [A] WO 9608305 A1 19960321 - TRANSONIC SYSTEMS INC [US]  
• [A] US 5312550 A 19940517 - HESTER ROBERT L [US]  
• [A] US 5453576 A 19950926 - KRIVITSKI NIKOLAI M [US]  
• [A] US 5510717 A 19960423 - BUFFALOE IV GEORGE W [US], et al  
• [A] EP 0693297 A1 19960124 - BELLCO SPA [IT]  
• [A] EP 0416808 A1 19910313 - ASH MEDICAL SYSTEMS INC [US]  
• [A] EP 0532432 A1 19930317 - HOSPAL IND [FR]  
• [A] DEPNER T A ET AL: "HEMODIALYSIS ACCESS RECIRCULATION MEASURED BY ULTRASOUND DILUTION", ASAIO JOURNAL,US,J.B.LIPPINCOTT CO.,HAGERSTOWN,MD, vol. 41, no. 3, 1 July 1995 (1995-07-01), pages 749 - 753, XP000542961, ISSN: 1058-2916  
• [A] DEPNER T A ET AL: "CLINICAL MEASUREMENT OF BLOOD FLOW IN HEMODIALYSIS ACCESS FISTULAE AND GRAFTS BY ULTRASOUND DILUTION", ASAIO JOURNAL,US,J.B.LIPPINCOTT CO.,HAGERSTOWN,MD, vol. 41, no. 3, 1 July 1995 (1995-07-01), pages 745 - 749, XP000542960, ISSN: 1058-2916  
• [A] SHERMAN R A ET AL: "RATE-RELATED RECIRCULATION: THE EFFECT OF ALTERING BLOOD FLOW ON DIALYZER RECIRCULATION", AMERICAN JOURNAL OF KIDNEY DISEASES, vol. 17, no. 2, 1991, pages 170 - 173, XP000949035  
• See references of WO 9817193A1

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