

---

## **Study of The Effect of pressure on PEM Fuel Cells, Operated with Variable Loads<sup>1</sup>**

**Sayed M. Hossein Mousavi<sup>2</sup>**

**Hashem Warkozak<sup>3</sup>**

**Mahmod al-Ahmad<sup>4</sup>**

---

### **Abstract**

The Production of electric energy from fuel cells is particularly promising. It is characterized by high efficiency ( about 40-60%) , high reliability and without environment pollution . In this paper, detailed investigation has been done related to the optimum performance of fuel cells system - type proton exchange membrane (PEM) , by governing gases pressure of injection fuel . This process, verified by simulation method Matlab/simulink, confirms the effect of pressure control on the fuel cells performance and efficiency .

---

<sup>1</sup> For the paper in Arabic see pages (213- 224).

<sup>2</sup> Ms. En. Damascus University - Faculty of Mech.& Elec. Engineering, Damascus University.

<sup>3</sup> Faculty of Mech.& Elec. Engineering, Damascus University.

<sup>4</sup> Faculty of Mech.& Elec. Engineering, Nebraska University - USA.