UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Departament d'Enginyeria Electrònica

"ENERGY MANAGEMENT STRATEGIES BASED ON FUZZY LOGIC CONTROL FOR GRID-TIED DOMESTIC ELECTRO-THERMAL MICROGRID"

PhD dissertation submitted for obtaining the Doctoral degree from the Universitat Politècnica de Catalunya, in the PhD program in Electronics Engineering

Diego Gustavo Arcos Avilés

Advisors: *Francisco Juan Guinjoan Gispert (UPC)*

Luis María Marroyo Palomo (UPNa)

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FE DE ERRATAS

Tesis Doctoral:

"Energy Management Strategies based on Fuzzy Logic Control for Grid-Tied Domestic Electro-Thermal Microgrid"

- **pag. ix:**   At the end of the last paragraph refers to "Public University of Pamplona", and should be: ***Public University of Navarre (UPNa).***

- **pag. xvii:** The captions of Fig. 2.1 and Fig. 2.2 should refers to ***architecture*** instead of topology.

- **pag. xviii:** The index of Fig. 3.16 should be on page 49.

- **pag. xxvii:** The nomenclature for the positive and negative grid power peaks should be the next:

$P_{G,MAX}$ Positive grid power peak

$P_{G,MIN}$ Negative grid power peak

- **pag. 29:**   The variable $P_{GRID,MAX}$ is misspelled, therefore, eqn. (3.2) should be the next:

$$P_{G,MAX} = \max\left(P_{GRID}\right) \tag{0.1}$$

- **pag. 29:**   The variable $P_{GRID,MIN}$ is misspelled, therefore, eqn. (3.3) should be the next:

$$P_{G,MIN} = \min\left(P_{GRID}\right) \tag{0.2}$$

- **pag. 30:**   According to (3.2) and (3.3), eqn. (3.4) should be the next:

$$PVR = \frac{P_{G,MAX} - P_{G,MIN}}{P_{LG,MAX} - P_{LG,MIN}} \tag{0.3}$$

- **pag. 32:**   Eqn. (3.13) should be the next:

$$P_{LG,HF}(n) = P_{LG}(n) - P_{LG,LF}(n) \tag{0.4}$$

- **pag. 36:**   At the end of the second paragraph of the Control strategy and FLC design refers to "… FLC [58] of three inputs…, and 25-rules", and should be: *FLC [58] of three inputs…, and **50-rules.***

- **pag. 36:**   Fig. 3.6 has a misplaced sign. The correct figure should be the next:
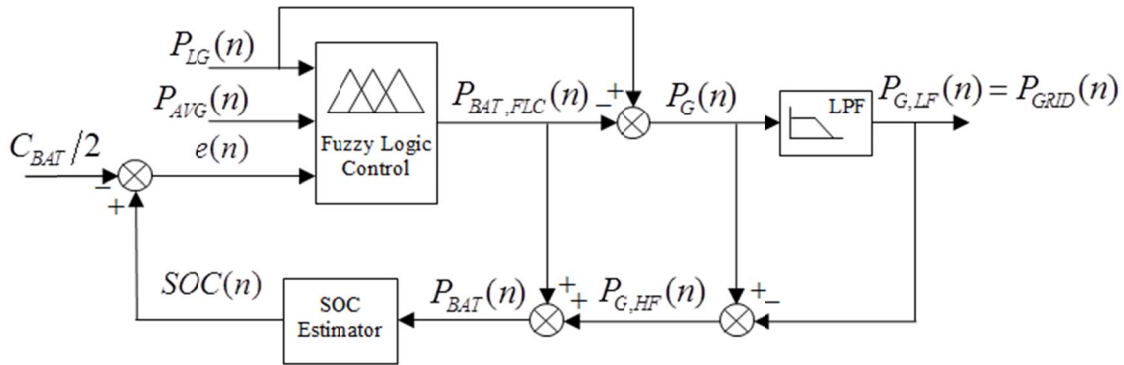
Fig. 3.6. Block diagram of the fuzzy energy management strategy based on MG NPT

- **pag. 49:** The label of the Fig. 3.16 should be in the same page

- **pag. 65:** At the fourth line of the las paragraph indicates "… (i.e. the battery is charging at a constant power, pink dashed line)…", and should be: *... (i.e. the battery is charging at a constant power, **mustard-colored** dashed line)...*

- **pag. 73:** The variables in Fig. 4.8 are misspelled. The correct figure should be the next:
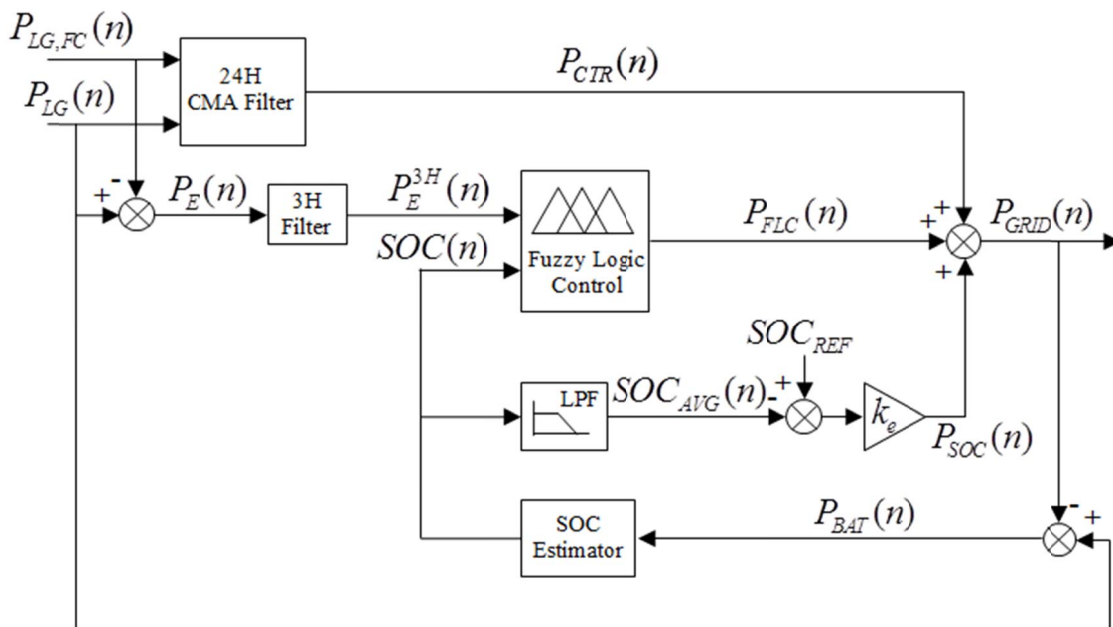
Fig. 4.8. Fuzzy EMS based on MG power forecasting block diagram
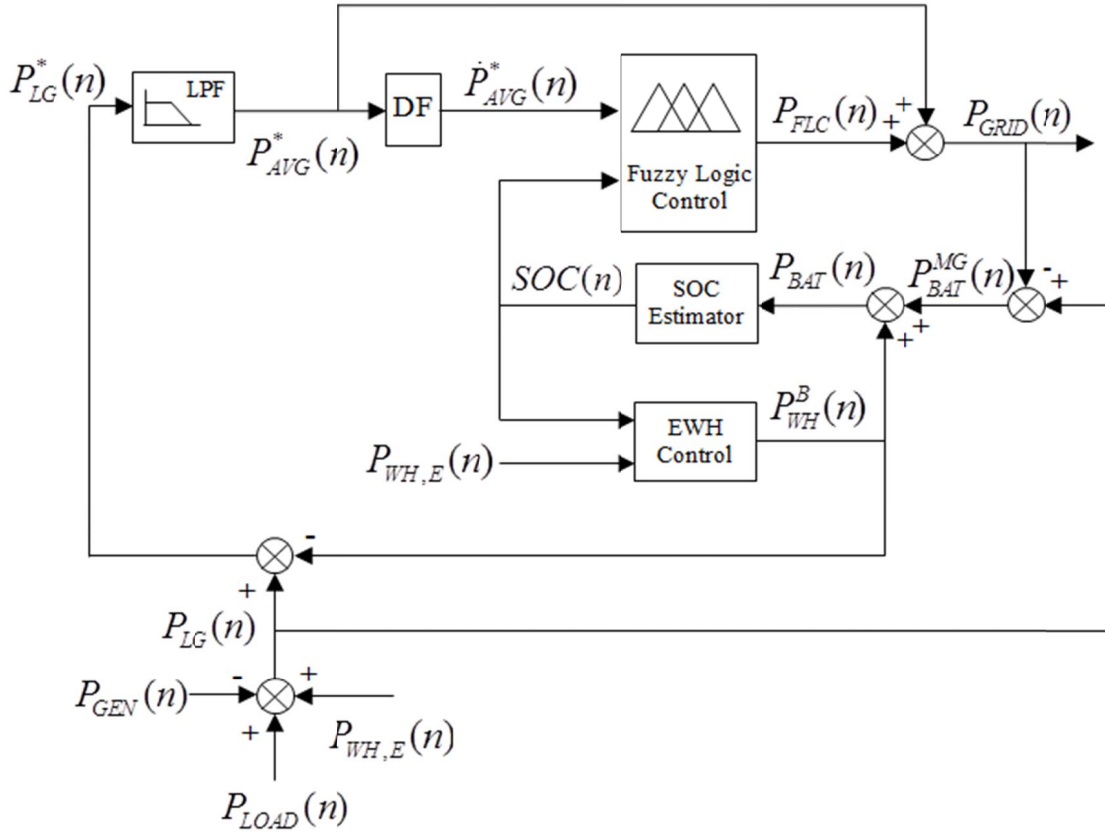
- **pag. 91:** Eqn. (5.9) should be the next:

$$P_{BAT}^{MG}(n) = P_{LG}(n) - P_{GRID}(n) \qquad (0.5)$$

- **pag. 92:** Eqns. (5.12) and (5.13) are misspelled and should be the following:

$$E_{WH,E} = T_s \cdot \sum_{n=1}^{N} P_{WH,E}(n) \qquad (0.6)$$

$$E_{WH}^{B} = T_s \cdot \sum_{n=1}^{N} P_{WH}^{B}(n) \qquad (0.7)$$

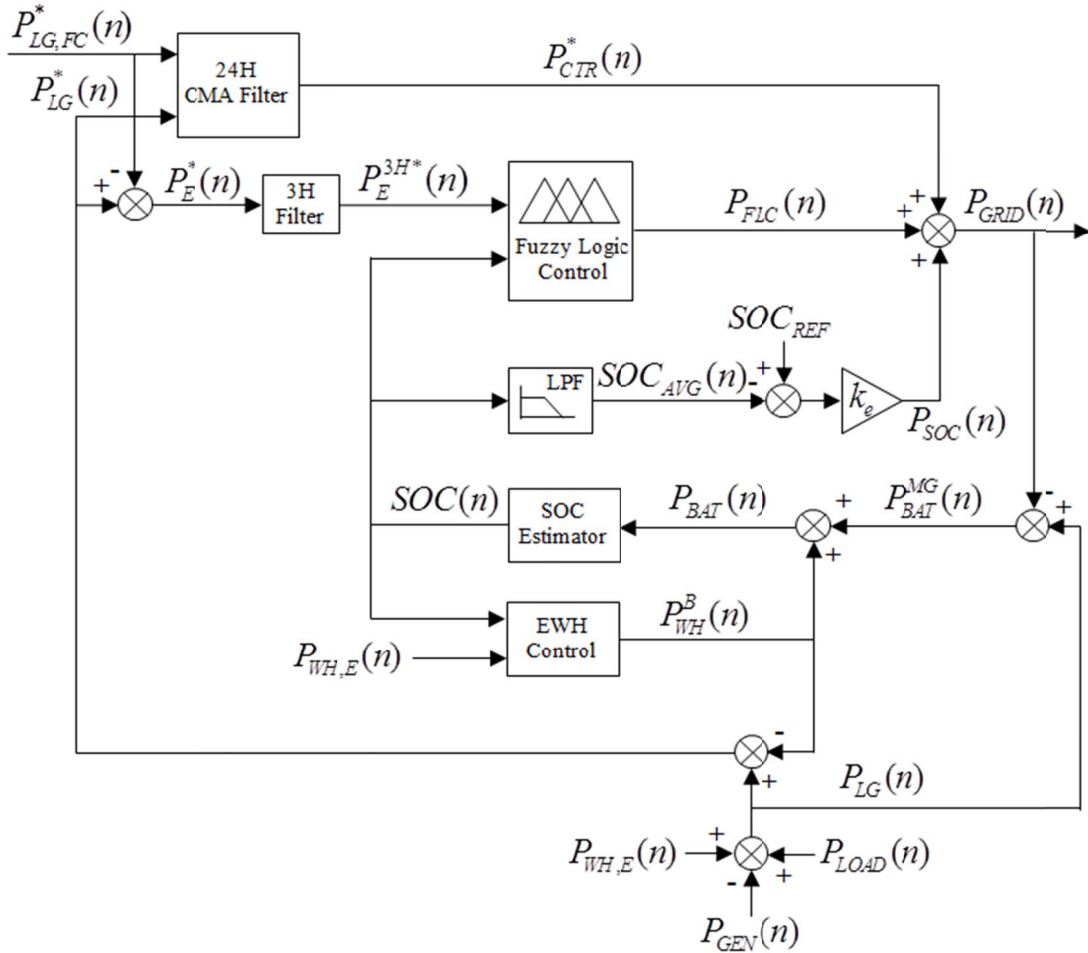- **pag. 92:** The variables in Fig. 5.2 are misspelled. The correct figure should be the next:

Fig. 5.2. Block diagram of the Fuzzy ERoC strategy applied to an electro-thermal microgrid

- **pag. 93:** Eqn. (5.16) has a misspelled sign. The correct eqn. should be the next:

$$P_N \le P_{FLC}(n) \le P_P \qquad (0.8)$$

- **pag. 101:** The variables in Fig. 5.11 are misspelled. The correct figure should be the next:

Fig. 5.11. Block diagram of the Fuzzy EMS-FC strategy applied to an electro-thermal microgrid