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Apêndice I

Durante este trabalho de mestrado outros trabalhos foram desenvolvidos e como fruto, os seguintes artigos forma publicados:

- Quirino, W. G.; Legnani, C.; dos Santos, R. M. B.; Teixeira, K. C.; Cremona, M.; Guedes, M. A.; Brito, H. F., "Electroluminescent devices based on rare-earth tetrakis β-diketonate complexes", *Thin Solid Films* 517, p. 1096 -110, 2008.
- Marulanda, J. I., Cremona, M., Santos, R. M. B., Carvalho, M. C. R., Demenicis, L. S., "Characterization of SrTiO3 thin films at microwave frequencies using coplanar waveguide linear resonator method", *Microwave and Optical Technology Letters* 53, p. 2418-2422, 2011.

Com relação ao trabalho desenvolvido, estão sendo preparados dois artigos referentes aos resultados dos estudos:

- do comportamento da MR, nos dispositivos orgânicos produzidos, como função de diferentes materiais utilizados na camada transportadora de buracos.
- de investigação da MR sobre os dispositivos orgânicos produzidos baseados nos complexos de íons de terras-raras.

Apêndice II

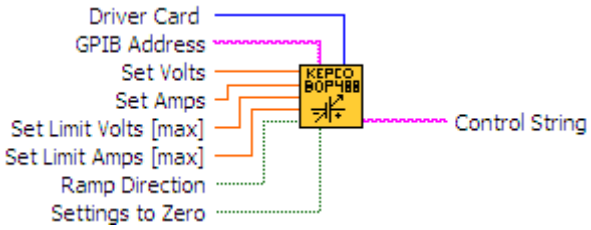
O tratamento realizado sobre os dados coletados a partir da detecção do amplificados *Lock-in* é realizado utilizando a seguinte rotina do software MatLab, construída durante este trabalho de mestrado.

```
clear
r=load('nome do arquivo.txt'); % dados coletados pelo Lock-in
B=r(:,1)*1e-3; % conversão do campo em Tesla
dV=r(:,2)*1e-6; % conversão dos dados coletados pelo lock-in em V
dI=dV/10e3; % dividir pela resistência 10k
dIdB=dI*10e6/5e-3; % multiplicar por 10^6 e dividir por dB (em T)
figure(1)
plot(B*1e3,dIdB,'o-') %construção do gráfico dI/dB em função de B
dIdB=dIdB+2
xlabel('Applied field (mT)')
ylabel('dI/dB (\muA/T)')
fit1 = fit(B,dIdB,'pchipinterp');
DI = integrate(fit1,B,B(1)); %integral da curva no gráfico dI/dB
I0=50; % media da corrente no dispositivo em µA
figure(2)
B=B*1E3;
DI=(-100)*(min(DI/I0)-DI/I0);
dados=[B,DI];
save DI_nome do arquivo.txt dados -ascii;
plot (B,DI,'o-') % construção do gráfico ΔI/I0 (%)em função de B
xlabel('Applied field (mT)')
ylabel('\DeltaI/I0 (%)')
grid
```

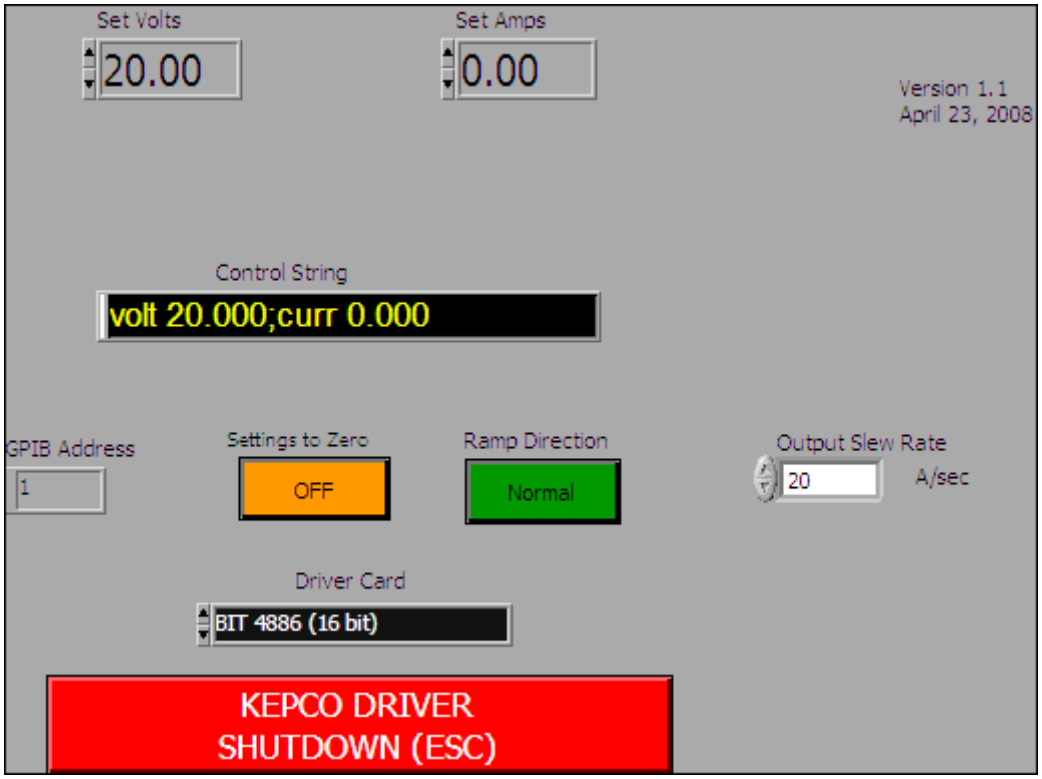
Apêndice III

O controle da fonte de corrente do eletroímã (i) e do amplificador *Lock-in* (ii), utilizados no sistema de medições, é feito remotamente através das rotinas do software Labview apresentadas abaixo. Uma das rotinas de Labview foram obtidas na aquisição do eletroímã e a outra foi obtida através do site da *Signal Recovery*:

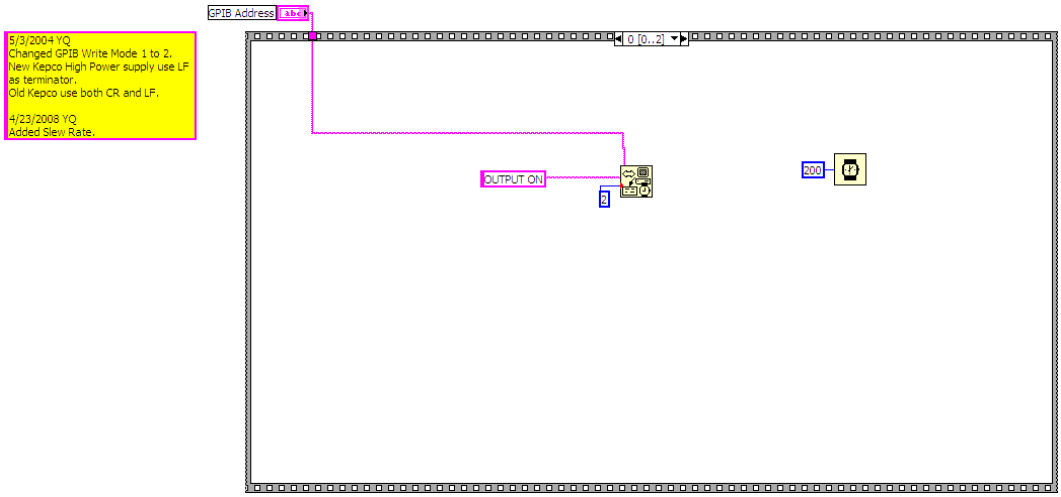
(i) Controle da fonte de corrente do eletroímã:



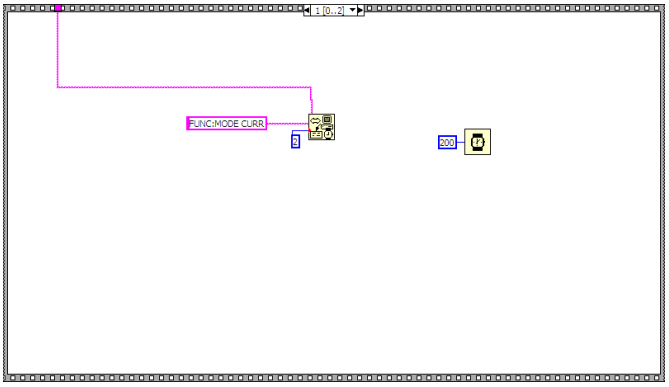
Painel principal



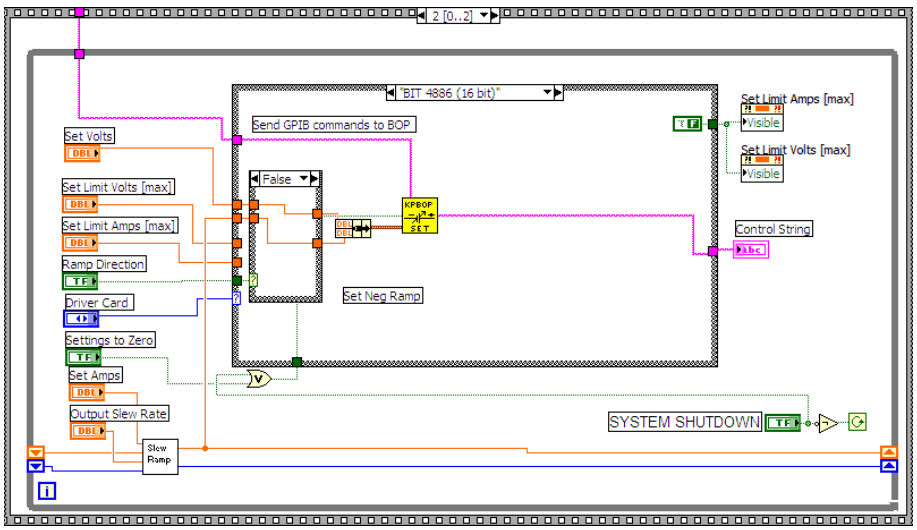
Habilitação da saída da fonte



Configuração para o modo corrente

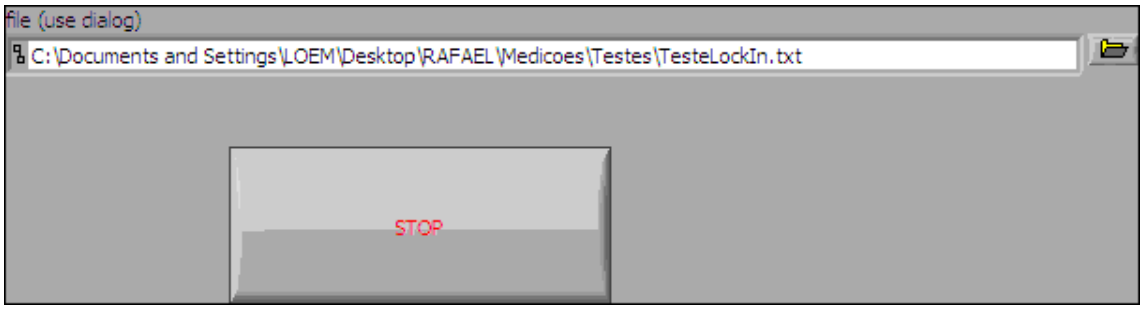


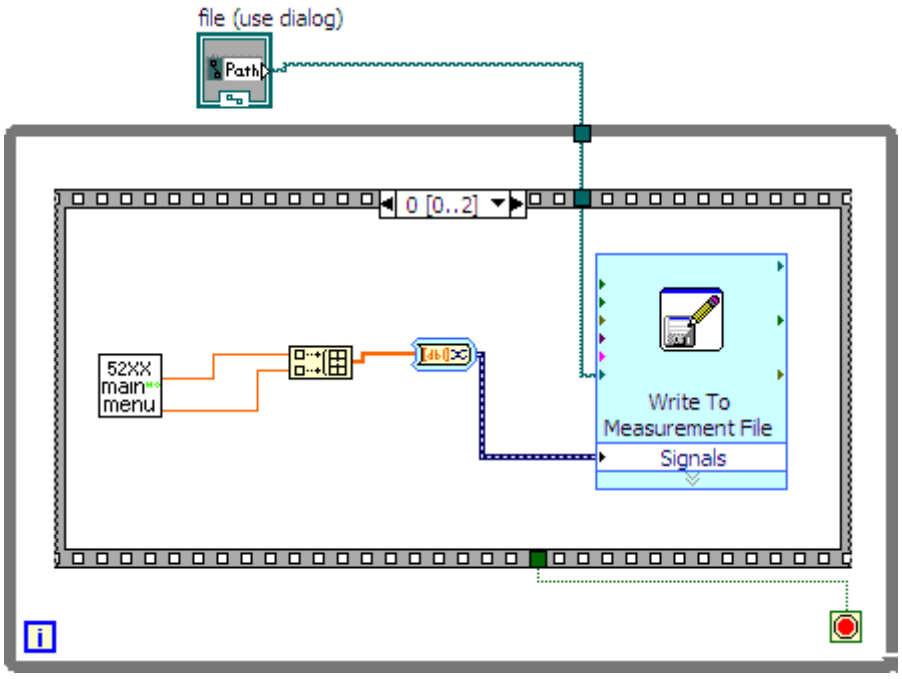
Controle da fonte

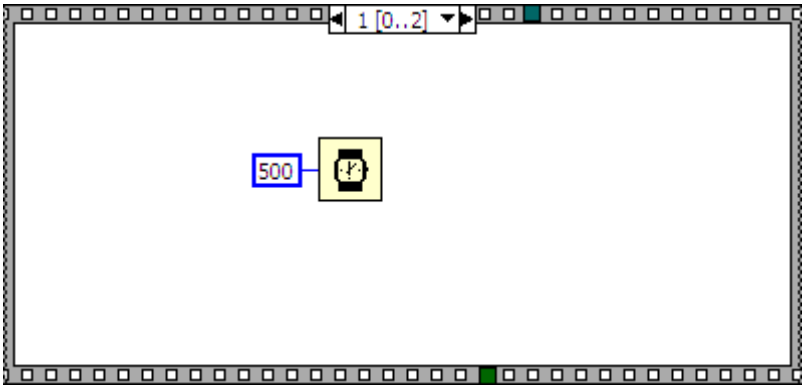


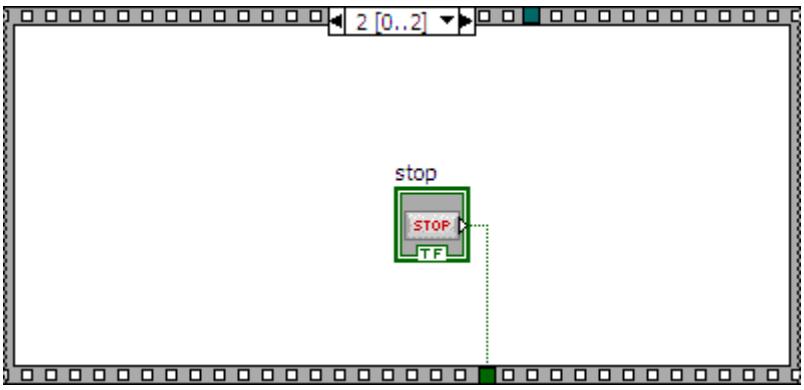
(ii) Controle do amplificador *Lock-in*.

Painel principal









Painel principal de controle da coleta dos dados de tensão do amplificador *Lock-in*