```
function [ Hd, h ] = designFractionalOctaveBandFilters

% Use filterbuilder for design
% See also FDATool, FVtool, sosfilt, sos2tf, dfilt/filter

B  = 3;       % Bands per octave
N  = 6;       % Order
Fs = 44100;   % Sampling Frequency

% Center frequency
% F0 = [ 25.12 31.62 39.81 50.12 63.1 79.43 100 125.89 158.49 199.53 ...
% 251.19 316.23 398.11 501.19 630.96 794.33 1000 1258.93 1584.89 1995.26 ...
% 2511.89 3162.28 3981.07 5011.87 6309.57 7943.28 10000 12589.25 15848.93 ...
% 19952.62 ];

F0 = [ 316.23 398.11 501.19 1995.26 2511.89 3162.28 3981.07 5011.87 ];


warning('off','signal:fspecs:octavewordncenterfreq:thisvalidate:InvalidF0')
for ink = 1:length(F0)
    h(ink) = fdesign.octave(B, 'Class 0', 'N,F0', N, F0(ink), Fs);
    Hd(ink) = design(h(ink), 'butter', 'SOSScaleNorm', 'Linf');
end
warning('on','signal:fspecs:octavewordncenterfreq:thisvalidate:InvalidF0')

doPlot = 'n';
if strcmpi(doPlot(1), 'y')
    for ink = 1:length(F0)
        [ H, W ] = freqz(Hd(ink),16384);
        semilogx(W, 10*log10(abs(H)))
        hold on
    end
    xlabel('Normalized Frequency')
    ylabel('Magnitude of Filter Response')
    axis([ 0.0001   10.0000 -50 10])
    grid
end
```